Celebrating INNOVATION

From animators to 3D tissue bioprocessing to innovator incubators to lab testing companies to clinical trial innovators to communication disrupters, these companies are changing the healthcare landscape.

in·no·va·tion

the action or process of innovating.
• a new method, idea, product, etc.

When this special issue was conceived, the idea was to shine a light on the innovators and innovations that are changing the life-sciences industry. We issued a call to action to our readers to identify the companies that are changing the paradigm and the products, tools, technologies, processes, etc. that are making a difference in the lives of patients. We were overwhelmed by the responses; at the same time we are very much aware that the companies and products featured in this issue only scratch the surface of the innovations that are taking place everyday in every sector of healthcare.

For example, just last month Johnson & Johnson Innovation LLC announced the opening of JLABS @South San Francisco, a 30,000-square foot incubator that can accommodate up to 50 startups from across the healthcare spectrum including biotech, pharmaceutical, medical device, consumer, and digital health. The first resident startups have been selected, including the winners of the Johnson & Johnson Innovation, JLABS Quick Fire Challenge, which was designed to recognize the most promising new, early-stage innovation companies and award them with the use of a bench and access to the JLABS @ SSF community.

J&J is not the only major pharma company that is fielding incubator type facilities to encourage open collaboration. Bayer has also invested in an incubator, the CoLaborator in San Francisco, to offer biotechs the lab space, shared facilities, and resources necessary for discovery. Merck established the California Institute for Biomedical Research (Calibr) and Pfizer initiated The Pfizer Incubator and The Centers for Therapeutic Innovation (CTI).

Additionally, open collaboration is happening at major nonprofit institutions, such as the Multiple Myeloma Research Foundation's CoMMpass Study, launched in 2011 as the first of its kind in myeloma. The collaboration includes world-class researchers in more than 90 institutions. A "dream team" of cancer specialists is helping researchers gain access to each patient's genetic analysis to help them learn how patients respond to therapies.

Another example of cross collaboration is the National Institutes of Health's Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, which is part of a Presidential focus aimed at revolutionizing

Innovative Leaders

Now in its fifth year, IDEA Pharma's (ideapharma.com) Productive Innovation Index (PII) celebrates the top 30 pharmaceutical companies most effective at developing and commercializing new medicines — bringing innovations to market successfully. The index can be summarized by the question: if you gave the same molecule to two different companies in early phase, which would make the best of it?

Based on an objective, rolling analysis of each company's performance, between 2009 and 2014, **Johnson & Johnson (J&J)** has continued to demonstrate its leadership in pharmaceutical product commercialization. They remain cemented in first place for the third year running, despite a significant shift in companies moving into the top 10.

With eight of its drugs hitting double-digit growth across five disease franchises, J&J's worldwide pharmaceutical sales increased by 14.9%, with the star performer being its hepatitis C combination drug Olysio/Sovriad, reaching over $2 billion in sales in 12 months. This growth was bolstered further with successful launches for Invokana, Imbruvica, and Zytiga, which helped to strengthen its position in the ranking alongside new approvals for Invega Sustenna and Rezolsta.

Notably, the biggest climber — moving up from 18th to take second place — is **Gilead Sciences** for its standout performance in launching blockbuster drug Sovaldi, pulling in $10 billion in revenue in just one year, one of the industry's most successful launches ever. Cited as one to watch in last year's Index, Gilead's undeniable rise was also reinforced by the launch of the first hepatitis C combination pill, Harvoni; the continued return on investment for Stribild; achieving FDA approval and breakthrough designation for Zybelig, and obtaining CDC backing for Truvada. This saw the company knock Novartis down to rank third.

Despite its move, **Novartis** has remained in the top three in recognition for the continued growth from its core assets Afinitor, Tasigna, Zortress, and Gilenya, and contributions from its industry-leading late-stage pipeline. Supporting this were a number of key approvals in 2014, including Zykadia for metastatic lung cancer, Xolair for hives, and Cosentyx for psoriasis to name a few. Bexsero also had a good year with a breakthrough designation, winning Prix Galien and FDA approval. What pegged Novartis back was the refusal for serelaxin in heart failure, and pulling the Tasigna EMA application for Philadelphia chromosome positive-CML.

Other companies that made significant moves into the top 10 were **Biogen**, **Amgen**, and **Celgene** – the latter was the second biggest climber into the upper echelons, moving from 16th to take 8th place, for successfully expanding its reach from oncology and having an immediate impact in the immunology arena.

The PII looks beyond revenue figures and raw approval rates and assesses companies based on a range of factors, including speed to market, attrition rate across phases — in particular Phase III, reimbursement rates, regulatory approvals, and analyst rankings.

our understanding of the human brain. By accelerating the development and application of innovative technologies, researchers will be able to produce a revolutionary new dynamic picture of the brain that, for the first time, shows how individual cells and complex neural circuits interact in both time and space. Long desired by researchers seeking new ways to treat, cure, and even prevent brain disorders, this picture will fill major gaps in our current knowledge and provide unprecedented opportunities for exploring exactly how the brain enables the human body to record, process, utilize, store, and retrieve vast quantities of information, all at the speed of thought.

We know that innovation is happening in big pharma companies, at startup biotechs, at med/device companies, in hospital systems, and in every type of company that supports the vast life-sciences industry.

Nontraditional healthcare companies such as Google and Microsoft are collaborating with brand-name pharma companies. Universities are partnering with emerging startups. Healthcare advertising agencies are teaming up with software developers. Clinical service providers of all types are taking to the cloud. There seems to be no limit to the lengths forward-thinking leaders are willing to take their companies.

According to a recent PwC report, business executives are banking on bold innovation to meet aggressive growth targets, so they are taking innovation more seriously than ever before.

In the spirit of Peter Drucker who said, "innovation is work," business executives are focusing less on informal processes that produce incremental improvements to internal operations and more on formal innovation approaches that generate "breakthrough" and "radical" innovation.

In PWC's latest innovation study, 69% of 1,757 senior executives contend having a well-defined innovation process is important to establishing a culture of innovation. This rigor is necessary to improve the chances of innovation success. To make headline-worthy innovations happen, a significant percentage of companies are looking to new innovation models such as open innovation (collaboration with outside partners), design thinking (looking at the need from an anthropologist's perspective), corporate venturing (investing in startups), and incubators (small groups of intrapreneurs that use rapid prototyping).

The consulting company Insigniam contends that innovations can be small or large, from incremental step-changes to outright breakthroughs. We agree, as evidenced by the innovations featured in this issue. Some are outright audacious in their vision, while others provide incremental, yet vital, changes to the system.

Executives at Insigniam add that successful organizations have the dependable ability to inspire creativity and harness small and large innovations across the enterprise and, then, move them to market with speed. In a recent Insigniam survey of several hundred executives, 87% of respondents say innovation is of the utmost importance for success. Yet only 15% feel their organization is prepared to deliver the needed level of innovation. It seems as though new thinking to elevate value and launch dramatic growth opportunities is in the DNA of the enterprise, with every single employee committed to innovation.

Insigniam executives offer several best practices to create an innovative culture, including: inoculate against the corporate immune system; less corporate gravity; corrected corporate myopia; greater innovation thrust; creativity, capability, and capacity; and effective execution.

There is no doubt that big data in all its petrabytes is significantly driving innovations across every sector. Companies such as GE and Siemens are breaking barriers and moving the needle in significant ways. And we can't forget to note IBM and Watson, the supercomputer that is using big data analytics to address healthcare's hierarchy.

Over the past 15 years, PharmaVOICE has been excited to share the insights of innovators and provide visibility to the innovations that are changing the industry. And, in the past two years we have dedicated a special department each month — Innovator's Corner — to spotlight companies that are changing the status quo. (See Letter from Editor). So, we are particularly proud to celebrate more than 100 companies and products in this special issue.

We look forward to hearing from you about new areas of research and development and innovations that we can celebrate throughout the year and in next April's special issue. (Please visit PharmaVOICE.com in May for more details.) PV

Companies

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Google TRANSFORMING DATA INTO HEALTH

From Google Glass to a Pill to Cure Cancer

Google is making its presence known in the healthcare sector in a big way with no signs of slowing down anytime soon. Perennially listed on Most Innovative and Most Admired lists, reports state that more than one-third of Google's venture capital in 2014 went to healthcare and life-sciences companies, a 9% increase from the previous two years.

Even before the launch of Google Glass in 2013 — which is undergoing revisions and updates to enhance its usability — Google created Google [X], a life-sciences division dedicated to creating moonshots of healthcare innovations, a term coined by Astro Teller.

According to recent reports, Google is investing in several direct areas of healthcare and tangential areas, such as its self-driving cars, to deliver on its moonshot goals.

For example, Google Genomics provides an API to store, process, explore, and share DNA sequence reads, reference-based alignments, and variant calls, using Google's cloud infrastructure. The idea is to collect and compare millions of genomes to help propel medical research. According to reports, the cost to keep a copy of a genome with Google is just $25 per year.

Another project Google is working on is the Nanoparticle Platform, an effort to build a cancer-detecting pill. The idea is that this pill will contain magnetic nanoparticles that can latch onto certain cancer-related molecules in the bloodstream and that a wearable device could then use magnetic properties to recognize when this happens.

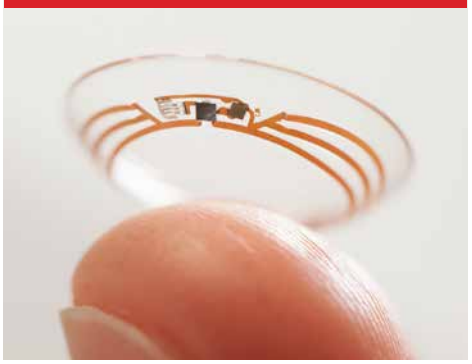
Google [X] has also entered into an agreement with Novartis' eye care division Alcon to in-license its "smart lens" technology for all ocular medical uses. The agreement between Google and Alcon represents an important step for Novartis, across all of its divisions, to leverage technology to manage human diseases and conditions. Google's key advances in the miniaturization of electronics complement Novartis' deep pharmaceuticals and medical device expertise. Novartis aims to enhance the ways in which diseases are mapped within the body and can be ultimately prevented.

Under the agreement, Google [X] and Alcon will collaborate to develop a smart lens that has the potential to address ocular conditions. The smart lens technology involves non-invasive sensors, microchips, and other miniaturized electronics that are embedded within contact lenses.

The goal is to help diabetic patients manage their disease by providing a continuous, minimally invasive measurement of the body's glucose levels via a smart contact lens, which is designed to measure tear fluid in the eye and connects wirelessly with a mobile device. The device is also intended for people living with presbyopia who can no longer read without glasses.

Calico is another Google-backed research and development company whose mission is to harness advanced technologies to increase the understanding of the biology that controls lifespan. The company's goal is to use that knowledge to devise interventions that enable people to lead longer and healthier lives. Calico's leadership has an impressive pedigree. The company is being led by Founder and CEO Arthur Levinson, Ph.D., former chairman and CEO of Genentech, and Hal Barron, M.D., former executive VP and chief medical officer of Genentech. Dr.

Google's smart lens technology has the potential to read blood-sugar levels, which would be a revolution for diabetics.



Google Co-founder Sergey Brin

Google wants to use the latest technology in miniaturization of electronics to improve people's quality of life.

Levinson was named by President Obama as one of eight recipients of the National Medal of Technology and Innovation and he was also named one of the 10 recipients of the National Medal of Science.

In 2014, Google extended its partnership pharma portfolio by entering into a novel R&D collaboration with AbbVie intended to help the two companies discover, develop, and bring to market new therapies for patients with age-related diseases, including for neurodegeneration and cancer.

The agreement paves the way for Calico to establish a world-class research and development facility in the San Francisco Bay area.

Furthermore, Calico entered into an agreement with UT Southwestern Medical Center and 2M Companies to advance research and drug development for neurodegenerative disorders caused by the aging and death of nerve cells.

Most recently, The Broad Institute of MIT and Harvard have entered into a partnership with Calico around the biology and genetics of aging and early-stage drug discovery. The partnership will support several efforts at The Broad to advance the understanding of age-related diseases and to propel the translation of these findings into new therapeutics. PV

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AmerisourceBergen HEALTH SYSTEMS SOLUTIONS

Getting Critical Medications to Patients

AmerisourceBergen, one of the largest global pharmaceutical sourcing and distribution services companies, is helping both healthcare providers and pharma and biotech manufacturers improve patient access to products and enhance patient care. The company's services range from drug distribution and niche premium logistics to reimbursement and pharmaceutical consulting services.

Understanding that the evolving healthcare landscape presents unique opportunities and challenges for health systems, including higher patient volumes, cost constraints, safety requirements, and other critical issues, AmerisourceBergen has responded with a number of innovative tools and processes to address a number of stakeholders in three key sectors of healthcare: pharmacies, providers, and manufacturers.

The company recently introduced a number of solutions to address hospital pharmacy issues, including Pharmacy Unit Dose Plus, an extension of the existing Unit Dose line of individually packaged medicine that creates efficiency among hospital staff and helps pharmacy professionals focus on patient care; TARxGET Reporting, a Web-based analysis and forecasting tool that enables hospitals and health systems to best manage inventory and control costs while maximizing the impact of medications on improved patient outcomes; and RxWorks Pro, a hospital pharmacy software platform that automates workflow and inventory management functions.

Within the provider space, AmerisourceBergen is the largest distributor of specialty pharmaceuticals to physician practices, the largest distributor of specialty pharmaceuticals to hospitals, the largest distributor of biopharmaceuticals, and the largest distributor of blood plasma, nephrology, vaccine, and biological injectable products.

In 2014, the company began shipping about 96,000,000 units of medication daily from what's been called a next-generation pharmaceutical distribution center in Ohio.

In September 2014, ASD Healthcare, a division of AmerisourceBergen, realized a significant milestone — exceeding 400 billion scans on its patented, radio frequency identification (RFID) inventory solution, Cubixx. This translates to about 150 million scans read and reported each day.

The milestone reflects the success of an innovative marriage between RFID technology and inventory management control for healthcare providers and patients. RFID tags use wireless capabilities to read and report unique, product identifiers automatically. By harnessing the RFID technology, ASD Healthcare created an alternative to traditional time-consuming and costly inventory management. The Cubixx solution streamlines logistics management, including inventory certainty, regulatory compliance, and life-saving products for hospitals, physicians, and patients.

AmerisourceBergen also provides innovative solutions for the manufacturer side of the business to maximize product success at every stage of the product life cycle, from clinical trial logistics and launch strategy to distribution, provider education, patient access, reimbursement support, and more.

For example, Xcenda, AmerisourceBergen's full-service consultancy, developed a virtual tumor case application as an alternative to live challenging case sessions. Through this application, Xcenda can present physicians with an online case scenario of a particular patient. They answer questions based on perception, awareness, and changes in market conditions. The information is then compiled and provided back to the manufacturer so it can gain insight from the provider's perspective and identify future trends based on this feedback.

AmerisourceBergen President and CEO Steve Collis

ThinkLive is one way we demonstrate our partnership approach. The annual summit offers manufacturers a unique forum to collaborate with our leadership team.

To continue to foster innovation across its divisions and with its client base, AmerisourceBergen hosts an annual manufacturer summit ThinkLive, which provides global pharmaceutical, biotech, medical device, and diagnostics manufacturers a unique forum to collaborate with company executives and hear from experts on key industry trends. The annual summit provides an opportunity for manufacturers to obtain industry insights on key issues, including improving product access, supply chain efficiencies, and enhanced patient care. PV

Through its state-of-the-art supply chain technology and Lean Six Sigma-compliant business processes, pharmacy and patients benefit from one of the safest, most secure, and efficient distribution systems in healthcare.

GE Healthcare TRANSFORMATIVE TECHNOLOGIES

Meeting the Demands of Global Healthcare

GE Healthcare

GE Healthcare is providing transformational medical technologies and services that are shaping a new age of patient care to meet the demand for increased access, enhanced quality, and more affordable healthcare around the world. From medical imaging, software and IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies, and performance improvement solutions, GE Healthcare is helping medical professionals deliver great healthcare to their patients.

In March 2015, GE Healthcare announced a strategic collaboration between its digital pathology joint venture, Omnyx, and its industry-leading diagnostic laboratory services company, Clarient Diagnostic Services to address the estimated 70% increase in cancer diagnosis predicted to occur over the next two decades and an estimated 1.41 million misdiagnoses of cancer.

Clarient will integrate the Omnyx proprietary software platform into its current laboratory. By combining the advanced molecular analysis of Clarient with Omnyx's software, the pathology community will have a data-rich pool of imaging enhancing the collaboration, gaining insights for more individualized cancer therapy.

While digital pathology is a solution growing in popularity, the field continues to face challenges with greater volumes of cancer testing and a shortage in the workforce to process them. Clarient and Omnyx are working together to help advance the industry, focusing on developing new solutions, analytics, and infrastructure that help pathologists more easily and accurately diagnose patients and offer more individualized therapeutic treatment plans.

Another recent innovation is GE Healthcare's Discovery IQ platform, a new PET/CT system, which is increasingly sensitive to detecting small forms of disease and built to provide consistent SUV (standardized uptake value) measurements so physicians can trust what they see, making it an essential tool in providing personalized care from disease detection through treatment assessment. With the highest National Electrical Manufacturing Association (NEMA) sensitivity and the largest axial field-of-view in the industry, Discovery IQ can image with both half the PET dose and half the scan time. Discovery IQ offers smaller lesion detection with GE's new Q.Clear next-generation PET reconstruction technology. Q.Clear provides up to two times improvement in PET quantitation accuracy (SUVmean) and up to two times improvement in image quality (SNR). Delivering consistent quantitative SUV measurements enables fast and efficient reading for greater confidence in evaluating a patient's response to cancer treatment.

GE Healthcare has a vast network of subsidiaries intent on improving healthcare around the world. One of these companies, GE Healthcare Life Sciences, recently expanded its relationship with Stevenage Bioscience Catalyst (SBC), the UK's first open innovation bioscience campus, by supporting SBC's open innovation challenge in neurodegenerative disease.

The link-up, which reflects GE Healthcare's drive to advance research in the diagnosis of neurological disorders, builds on its presence at SBC, where the company opened a Technology Laboratory in October 2013. Hundreds of millions of people worldwide are affected by neurodegenerative disorders such as epilepsy, Parkinson's and Alzheimer's disease, and SBC's open innovation challenge was established to help address this growing global problem.

John Flannery President and CEO of GE Healthcare

GE Healthcare is a $17 billion segment of General Electric Company and the first GE business with headquarters outside of the United States.

The open innovation challenge, which will stimulate interaction between academics, industry, and charities, was launched in May 2014 by SBC, Manchester Integrating Medicine, and Innovative Technology (MIMIT) and six leading Academic Health Science Centre Technology Transfer Organizations. Proposals from academic teams for research in two fields — biomarkers for diagnosis and patient stratification, and inflammation/neurodegeneration — will be reviewed by a panel of industry, public sector, and research charity experts. Selected projects will be announced in 2015. PV

Molecular imaging centers in India make early cancer detection more accessible and affordable.

Medidata TRANSFORMING CLINICAL TRIALS

Cloud-Based Solutions

medidata

Game on. These two small words pack a big punch at Medidata. Embraced by the company's executive team, and often incorporated into companywide emails, town hall meetings, and water cooler conversations, game on embodies the drive behind Medidata's mission of transforming clinical development through innovative technology and analytics.

Sitting at the intersection of technology and the life sciences, Medidata is transforming clinical development with its innovative applications and data-driven analytics. The company's mission is to help customers bring better treatments to waiting patients around the world. The company believes by serving one and only one very large and important industry, it can stay at the forefront of the life-sciences sector and be relentless in its quest to leverage technology to improve the efficiency of clients' clinical trials.

Fifteen years ago, businessman Tarek Sherif and lab scientist Glen de Vries formed Medidata after they recognized the need to improve the clinical trial process. Today, the founders continue to lead the company, and their entrepreneurial spirit and passion for innovation is widely recognized and embodied by employees, who are encouraged to take risks and push the boundaries of what cloud technology can do to make the science of drug development better.

For example, the company's mobile solution for patient-direct data capture Medidata Patient Cloud provides electronic patient questionnaires and diaries in a model that simplifies the process for both patients and researchers.

Design thinking is extremely important and at the heart of innovation as the industry moves toward a more patient-centric clinical research model. Medidata is in the early days of evaluating a number of different wearable devices with the goal of identifying the best one for use in clinical trials — in terms of ease of use for patients and data quality, security, privacy, and compliance for sponsors.

As wearable devices and connected biosensors become more sophisticated and easier to use, there is strong potential for them in clinical trials to gather better data on patients' response to therapy and progression of disease. Medidata is responding to this paradigm shift by piloting mHealth studies that use wearable devices to collect extensive, objective patient data in real time — data that identify digital biomarkers and reveal one of the foundational aspects of a clinical study: whether the patient is getting better.

Medidata's industry-leading cloud platform of innovative technology and data analytics is transforming clinical development.

Medidata President and Co-founder Glen de Vries

Medidata has built a cloud-based infrastructure that enables life-sciences companies to explore the use of mHealth technologies in clinical research.

Medidata is committed to fostering an innovative, agile company culture through professional development opportunities and resources. The company regularly conducts hackathons and offers company-sponsored innovation time. Medidata put these programs in place to encourage teams to come together and experiment with new concepts, research new approaches, and test methodologies. In 2014, the company's mobile app prototype won the Patient Engagement App Challenge at the 23rd Annual Partnerships in Clinical Trials Conference. The app was recognized for its potential to positively transform the clinical trial experience for study participants — a concept that emerged during a series of creative brainstorming sessions.

The company also launched the Medidata Patent Program in late 2013, an employee recognition program offering monetary awards for innovative ideas that help the company obtain patent rights.

Medidata's focus on employee innovation and investing in its people are among the reasons why the company was recently named one of 2015's Best Companies to Work for in New York State. PV

medidata

Pioneering mHealth in Clinical Trials

At Medidata, we believe that mHealth technologies can provide a much richer picture of patients' health in the real world. Data from sensors, wearables and apps lead to better insights, improved patient experiences and more efficient trials. But correctly using that data in clinical trials is a new challenge.

That's why Medidata is bringing the scientific discipline of clinical R&D to mHealth. We're spearheading pioneering mHealth trials and techniques to help our customers gather, analyze and make more informed decisions through this rich new data.

To learn more about Medidata's innovative mHealth initiatives and how we can help transform your research programs, visit www.mdsol.com/mHealth.

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ICON SPARKS EMPLOYEE ENGAGEMENT

New Global Innovation Hub Advances Clinical Development

ICON CEO Ciaran Murray

As innovation plays an increasingly important role in improving the outcomes of clinical trials, ICON is reinforcing our commitment to that goal by locating our global innovation hub in Ireland, one of the leading R&D and innovation centers in the world.

ICON
A Symbol of Excellence

ICON, a global provider of outsourced development services to the pharmaceutical, biotechnology, and medical device industries, is demonstrating its commitment to innovation through a significant investment in a new facility and an employee-engagement process designed to foster cross collaboration and ideation.

Guided by an overall management philosophy that recognizes that it does critical work for customers that has a significant impact on patients' lives around the world, ICON launched in January 2015 a new global innovation hub creating 200 new jobs in Ireland. The hub is designed to foster the development of new technologies and clinical trial processes that will enable faster access to large volumes of clinical data and allow clinical trial personnel to derive better insights from the data. The new jobs include roles in IT, data analytics, clinical science, project management, among others.

ICON's medical device and diagnostic research group provides dedicated resources throughout the lifecycle.

Another example of how the company has created an environment that fosters innovative thinking and encourages new ideas from across the organization in both informal discussions and formal channels is its "Ideas Management Solution." Managed by the ICON Innovation Team and branded SPARK, the platform enables all ICON employees to have their voice heard in overcoming particular challenges to find new ways to ways to better deliver quality data, speed up clinical development, lower cost to drug and device developers, and, improve patient safety.

ICON employees are encouraged and challenged to submit ideas to maximize the power of the crowd and the knowledge, experience, and insight each person can bring to the table.

The SPARK platform also gives employees an opportunity to comment and rate the ideas of colleagues. This, combined with business review against strategic and organizational goals, provides a perspective of which ideas are best to move forward and potentially into the proof-of-concept stage.

This process of continual employee-led innovation has generated several new products and services for the life-sciences industry. One of these is the company's ADDPLAN DF system, developed with five major pharma companies.

Another innovation is the cloud-based Firecrest's eConsent program. Despite intensive and costly monitoring, 9% of FDA findings are due to errors in the consenting process — the third most common cause of FDA findings. The solution helps to eliminate errors while providing a real-time view of trial compliance that is 21 CFR part 11 compliant.

ICON also funds The Chair in Business Analytics at University College Dublin (UCD). The Chair in Business Analytics is leading the development of a long-term teaching and research capability that will create a sustainable graduate base. Clinical research and development generates large amounts of data, and the partnership between ICON and UCD is designed to deliver additional insight to these data, which will be of significant value to pharmaceutical companies and medical firms and offer the opportunity to increase the efficiency of clinical trials.

ICON also funds research scholarships focused on big data projects. The emphasis is on the practical application of technical approaches to solving problems in business, and on developing methods for managing decision making.

This focus on data analytics and informatics has led to the development of a new tool to address the relatively poor success rates of CNS trials and the difficulty in measuring clinical endpoints for CNS drugs. The goal is to identify sites that warrant closer scrutiny by a site monitor.

ICON's commitment to innovation and creating clinical excellence has been recognized over the years by several high-profile industry awards, including the Vaccine Industry Excellence (ViE) Awards for Best Clinical Research Organization 2014, and the Institute for International Research and Partnerships in Clinical Trials' Partnership Pioneers of the Year award along with Pfizer in 2013. PV

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Reltio
PIONEERS NEW DIGITAL PLATFORM

Cloud-Based Data Management

Reltio

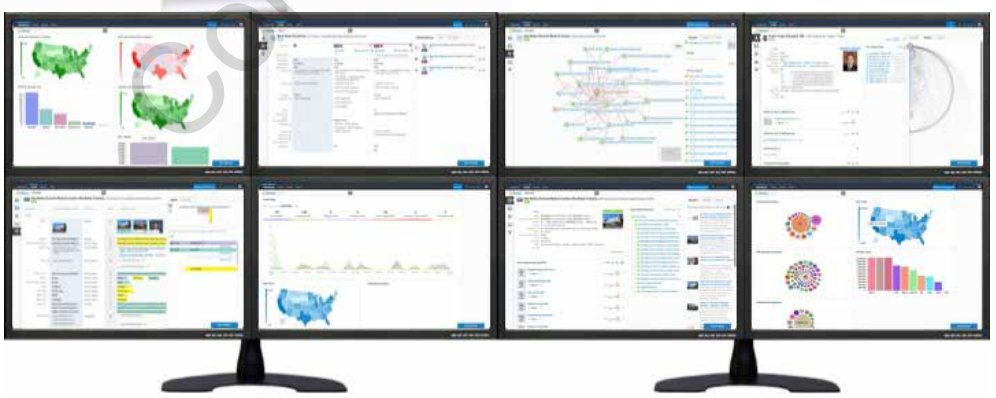
Reltio's moniker "be right faster" drives everything the company does. As a start-up and rapidly growing company, management is prepared to make decisions quickly with reliable data.

Manish Sood, CEO and founder, is responsible for the overall direction and management of Reltio, and the co-author of the patent that revolutionized master data management (MDM) through a global business identifier. He founded the company upon the belief that organizations need reliable, relevant access to information at their fingertips. Mr. Sood and his leadership team are inspired by the desire to disrupt the multi-billion software market through the use of big data technologies, master data management discipline, and cloud computing. Additionally, they believed that there was a gap in what IT delivered and what business needs. IT spends money on data management and business is frustrated with IT's time-to-value, purchases ad-hoc business intelligence products.

Reltio helps companies turn their data into information and knowledge assets in the most efficient way, shattering the traditional notion that IT must combine multiple technologies to manage different types of data, and that business users must purchase stand-alone tools to do their own analysis.

Consumer-driven applications such as Facebook and LinkedIn are setting expectations that technology should be easy to use and information should be at a person's fingertips. Managers at Reltio have put that same ease of use and insight in the form of data-driven applications for sales, marketing, and compliance teams so they can better predict, collaborate, and respond to opportunities in real time.

The cloud has leveled the playing field, giving both large and small companies the ability to manipulate data at scale.



Reltio CEO Manish Sood

Consumer-driven applications such as Facebook and LinkedIn are setting the expectations for technology to be easy to use and information should be at a person's fingertips.

Among the company's cutting-edge technologies is the Reltio Cloud, which the company reports is the only platform to deliver enterprise data-driven applications with reliable master data, relevant big data insights, and intelligent recommended actions. Reltio Cloud is a modern data management platform that is a fully contained master data management offering that has been proven to be 10 times more cost-effective and five times faster to deploy than legacy MDM offerings. This is a disruption to the $1 billion plus MDM software market.

Reltio manages all data types including multi-domain master data, transaction and interaction data, third party, public and social data. By combining operational and analytical silos, teams can continuously collaborate to improve the reliability of information, receive recommendations relevant to their goals, and take immediate action, all within the same application.

Reltio believes the days of separate MDM systems feeding disparate analytical reporting tools for discovery, and operational applications for data capture are numbered. Today reliable data, relevant insights and recommended actions can be combined into one single application, in the cloud, to deliver both analytical intelligence and operational execution. These enterprise data-driven applications are being touted as the future of software, and a part of a consumerization of IT trend that is helping sales, marketing, product brand, and compliance teams be more productive and successful every day. PV

SomaLogic
A REVOLUTION IN LIFE-SCIENCES AND MEDICINE

Making Proteomics Accessible

SomaLogic

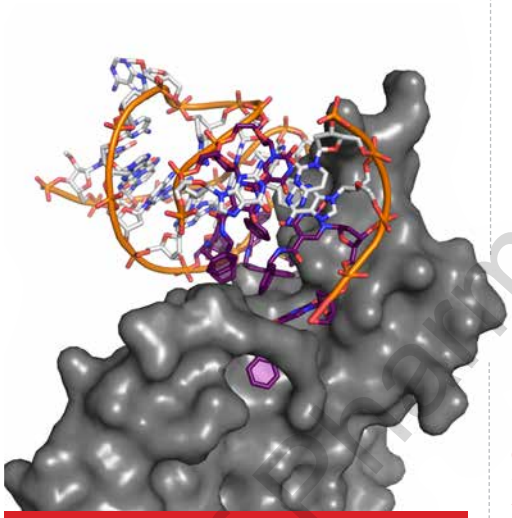
The ability to identify and measure individual proteins across the depth and breadth of the proteome (or proteomes) will transform biological research and even medicine. SomaLogic's goal is to develop and market breakthrough new protein biomarker-based pharmaceutical research tools that lead to new diagnostics and therapeutics.

SomaLogic was founded by Dr. Larry Gold in 2000 based on the belief that a high quality of life — wellness — is largely a matter of "actionable" measurement, and that the measurement that matters most is the complex and ever-changing array of proteins that circulate through our bodies in ways personalized to each of us.

The company believes that the ability to monitor an individual's health over time by measuring changes in his or her protein makeup is nothing less than a revolution in healthcare. The earliest possible detection of disease, the evaluation of nutritional and fitness states, and the measurement of the effects of external interventions such as drugs and supplements, together will empower individuals to monitor and maintain their state of health and wellness and thus improve their quality of life.

SomaLogic has spent the last 10 years developing and validating its proteomic technology platform Slow Off-rate Modified Aptamer (SOMAmer). SOMAmer is being used today to develop new diagnostic tests, discover new drugs and accelerate their translation to clinical practice, and reveal new understandings of basic human biology and disease.

In the course of experimenting with different types of "add-ons" to traditional aptamers, a group of SomaLogic chemists became interested in incorporating modified DNA bases into the aptamer pools. A great deal of trial and error was undertaken, resulting in the multiple modification "libraries" that exist today.

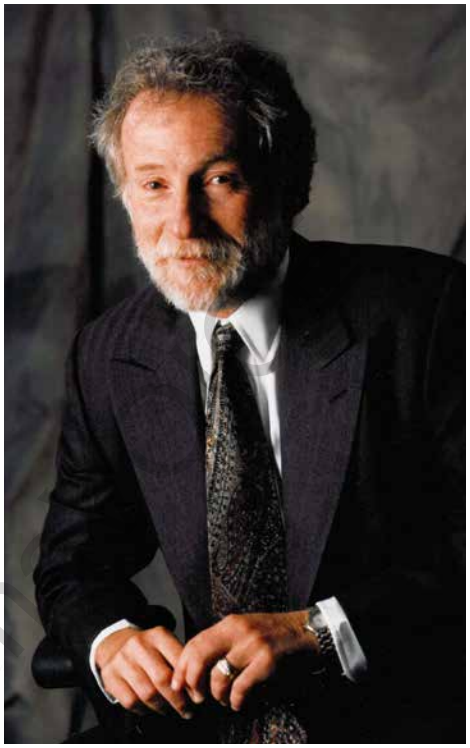


The crystal structure of a SOMAmer-protein pair reveals the unique binding properties of SOMAmer reagents compared with traditional aptamers (base modifications are in purple). This new generation of powerful protein-binding reagents is at the core of SomaLogic's SOMAscan assay, the biomarker discovery engine that drives the company's efforts.

From that initial concept to present day, the company has developed specific SOMAmer reagents to more than 5,000 proteins, a number that continues to grow.

The company's second breakthrough was the realization, established through experimental use, that individual SOMAmers could be pooled together to do large-scale protein measurement/biomarker discovery in many different types of biological samples, using very small volumes. The resulting technology is the SOMAscan assay. To date, the company has analyzed more than 60,000 clinical samples across many different diseases.

The company's leaders envision a day when all measurements can be brought together in a single inexpensive and easy test — perhaps even one that can be done at home. They call this visionary test the "Wellness Chip," and they are working to make it possible within the next decade.



SomaLogic Chairman and Founder Larry Gold, Ph.D.

SomaLogic technology overcomes the limitations of other proteomics approaches, allowing researchers to measure broadly across the proteome.

SomaLogic's technology overcomes the limitations of other proteomics approaches such as mass spectrometry and antibody-based analyses, allowing researchers to measure broadly across and deeply into the proteome, across a large range of concentrations and protein types.

The company is about to launch a test that can tell with very high specificity and sensitivity if an individual is at risk for a second heart attack or other cardiovascular event.

Currently, every person who has had a cardiovascular event is treated aggressively. If there was the ability to identify that smaller group of individuals who requires the aggressive intervention (and the larger group that does not), this could make a substantial difference in many lives.

The company is also working with the Bill and Melinda Gates Foundation to develop a field-friendly test for latent and active tuberculosis, based on the unique properties of SOMAmer reagents. Significant progress has been made, and the Gates Foundation renewed (and upped) the funding this past year. PV

MicroMass
LOOKING TO CHANGE BEHAVIOR

Evidence-Based Techniques for a New Standard of Care

micromass

Executives at MicroMass Communications have a vision: create a new standard in healthcare through the application of behavior change strategies. This vision is rooted in the company's application of applying behavioral science to pharmaceutical marketing that it started 20 years ago and continues to refine. The company's "innovation lab," which operates under the Health Behavior Group uses a rapid-fire, product-focused model to generate ideas and test real-word feasibility to respond to changing marketplace needs.

Another key principle that impacts how MicroMass designs solutions is the partnerships it has with patient advocacy organizations, health systems, and public health schools within universities that serve as an extension of its innovation lab. The agency chooses partners that are also focused on innovating to improve patient outcomes. This direct contact with stakeholders at the point of care ensures agency leaders have their pulse on the real-world needs of patients and providers.

To fully engage customers and understanding and deliver on their needs, the company employs a three-step method, which it calls Engage, that maximizes how multi-disciplinary teams pull through the behavioral insights and strategies into an end solution. Step one is "driver analysis;" behaviorists and strategists prioritize key drivers of customer engagement and craft a custom behavior change model.

Step two is "change mapping;" behaviorists, strategists, and creative teams identify evidence-based change strategies and formulate an engagement plan that provides a foundation for meeting behavioral and commercial objectives. Step three is "solution architecture;" this is a comprehensive action plan, outlining the tactical experience needed to engage customers and build lasting skills for better outcomes. The action plan is based on proven intervention components and delivery principles.

Last year MicroMass developed a new team within the creative department called the Behavioral Content Architecture group. This team of content strategists is applying evidence-based change strategies to multi-channel, skill-building programs. They are also certified health coaches and apply the principles of health coaching to develop more engaging and effective program content.

Another new program offering creates patient-provider dialogue programs, which are relevant across chronic conditions. This program incorporates evidence-based strategies, such as shared decision making and motivational interviewing and includes provider dialogue training and point-of-care tools to stimulate open conversations about treatments.

In addition to the Innovation Lab, MicroMass facilitates employee innovation by making sure all employees — not just behaviorists — are trained in applying evidence-based behavior change techniques. The agency brings in outside, non-industry experts at least once a year to expand the way employees think about applying these techniques, for example motivational interviewing, cognitive behavioral techniques, and health coaching.

The agency also developed an internal platform called Sparkology, for all individuals to have the opportunity to develop innovative solutions for the marketplace without the budget or regulatory parameters faced in client work.

Quarterly, employees are placed on Sparkology teams and provided a healthcare-related challenge to solve. They are asked to step outside their roles as project managers, account service, strategists, etc., and collaborate to come up with an innovative product to meet the assigned challenge. MicroMass leaders believe that solutions that go beyond information delivery can disrupt the marketplace and build provider and patient capabilities to change and improve quality metrics that take pharma success measures to a new standard that are valued by many different stakeholders. PV

MicroMass President Alyson Connor

MicroMass makes sure that all employees are trained in applying evidence-based behavior change to its offerings.

MicroMass's mobile app, Time2Focus, incorporates evidence-based techniques, such as problem solving and goal setting, and leverages gamification principles to drive lasting patient engagement.

PulseCX.com

Crank Up Your Brand's Customer Experience (CX)

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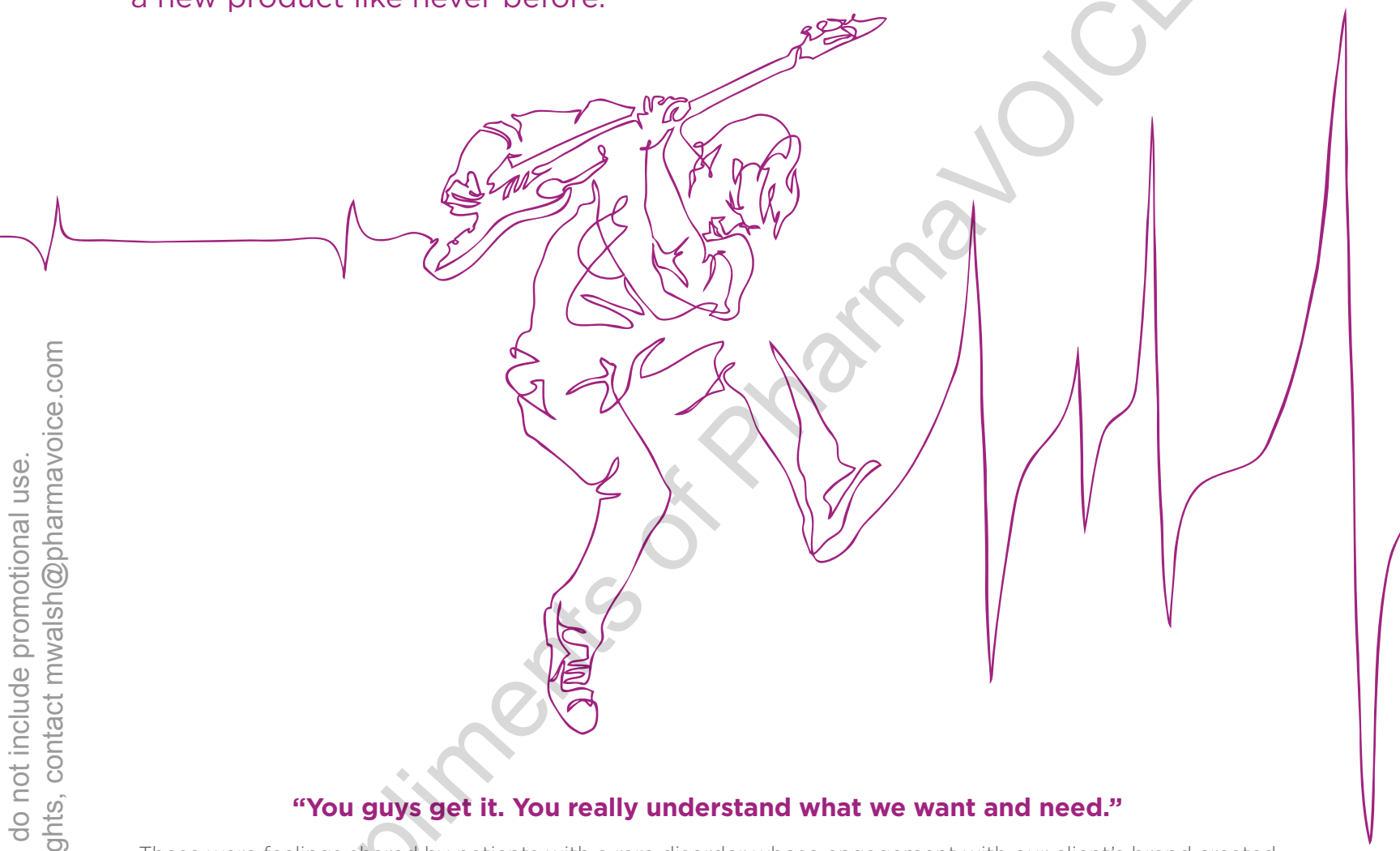

"You guys get it. You really understand what we want and need."

Those were feelings shared by patients with a rare disorder whose engagement with our client's brand created a unique customer experience (CX) that made them feel like stars of the show. By understanding their customer journey, we created true patient and physician connections and engaged them at just the right moments with authentic communications to change behavior and drive brand adoption.

Discover how PulseCX can leverage the customer experience (CX) to boost success for your brand.

Contact David Zaritsky at dzaritsky@PulseCX.com or 215.699.9200, and visit PulseCX.com today.

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experiences beyond measure

IMS Health
INCUBATING EMPLOYEE CONTRIBUTIONS

Bringing Innovative Ideas to the Fore

IMS Health CEO Ari Bousbib

IMS Health's Recognition Program acknowledges employees' efforts to improve the access, accuracy, and security of data in technologies for the life-sciences industry.

IMS Health applies cutting-edge analytics and proprietary application suites hosted on the IMS One intelligent cloud to connect more than 10 petabytes of complex healthcare data on diseases, treatments, costs, and outcomes to enable clients to run their operations more efficiently. IMS Health draws on information from 100,000 suppliers and on insights from more than 55 billion healthcare transactions processed annually to provide access to real-world evidence data that can be integrated into software applications, giving users answers to complex questions the pharma industry confronts today. IMS Health continually invests in technology, employees, innovation, and continuous improvement.

"We develop with clients for clients" is how IMS Health describes the culture of the organization. The company believes the best technological and procedural innovations can be compared with a playground with the most up-to-date toys and structures. However, the playground is a sad sight if there are no kids playing on it or if the structures are not well suited for kids. IMS Health takes a client-centric approach to understanding client needs, and in collaboration with clients builds innovative solutions that solve their business problems in a human-centric way following design-thinking principles.

In 2014, about 40 invention ideas were submitted to the Recognition Program by IMS Health employees, and 23 were approved for patent filings. Innovations range from systems that improve the access, accuracy, and security of data, to technology for better managing clinical trials, to methodologies that help life-sciences companies prioritize provider networks and develop regional and local strategies. For example, a patent for a cohort feature for a trial design process emanated from the Recognition Program.

The use of cohort-design trials by pharmaceutical and biotech companies is on the rise. In fact, for one of the company's customers, a top five pharmaceutical company, 30% of trials use a cohort design. Over the past few years more than half of the top 10 pharma companies requested that IMS Health build features allowing for the management of these trials.

This was a complex problem to solve and there were many other priorities on the roadmap. The breakthrough moment came when one client detailed its pain of using different systems and Excel spreadsheets to manage cohort trials.

This was a trigger to prioritize the module and to solve the problem in the shortest possible timeframe.

The product module was developed to alleviate intense difficulties reported by clients in planning, tracking, and predicting the outcomes of cohort trials in real-time. The automation allows for modeling scenarios and predicting outcomes using algorithms that take actuals into consideration, which is impossible to perform in this fashion in Excel or with any other competitive product currently on the market for this type of trial design.

Another industry innovation developed by IMS Health is the suite of SiteOptimizer products. The IMS Health CTOS Optimizer products launched in 2006 were the first in the market to address enrollment challenges by providing actionable insights, resulting in a direct reduction in the duration of, and expenses for, clinical trials. Patient lives are improved by faster delivery of drugs to market.

Another new IMS Health product is the Mobile Sales solution, which is reportedly the first mobile sales and marketing effectiveness solution that allows life-sciences companies to optimize and execute brand strategies at local levels.

The patent-pending "Next Best Customer" helps prioritize customers based on brand strategy, local dynamics and multiple data sources, including targeted prescriber behavior, payer influence, territory sales and proximity. PV

IMS One powers suites of commercial, clinical, payer and provider applications designed to work together.

Klick Health
A DECODED COMPANY

A Company Culture Built on Disrupting the Status Quo

Klick Health

Klick Health, as they say, is different from the ground up. Formed 17 years ago, the independent digital health agency is fueled by, in their words, data geeks who appreciate fine art and MBAs who have minored in molecular biology, all of which add up to a unique blend of business consultancy, creative agency, and technology shop under one roof.

Innovation is at the heart of what Klick does; agency leaders believe the best way to predict the future is to invent it. Laser-focused on creating solutions that engage and educate healthcare providers about life-saving treatments, Klick helps inform and empower patients to manage their health and play a central role in their own care. Every solution hinges on Klick's in-house expertise across the digital universe — strategy, creative, analytics, instructional design, user experience, relationship marketing, social, and mobile.

Before creating the Sensei Lab, which helps align organizations' belief systems and operating systems so they can execute and evolve faster, Klick aligned its internal processes, first by eliminating email and then creating the Genome, which supports everything that happens in the agency. Genome was recently recognized as one of the top 10 intranets in the world. Klick also instituted an employee concierge service that regularly orders work-late dinners and runs errands for Klicksters, as agency employees call themselves, to make their lives easier. The service also manages the company's on-site health and wellness center (offering free daily yoga and fitness classes) and convenient dry cleaning service, as well as handling customized tasks for employees, as required. The company is dedicated to bringing out the best in its people and fosters a sense of camaraderie in everything it does, including Camp Muskoka, where the entire company bunks together at a camp in the Muskokas for a weekend.

Klick reinvests tremendous amounts of resources back into R&D, which comes to life through Klick Labs and the applied innovations it brings to the market. Klick Labs is run by a dedicated team of healthcare experts who are passionate about creating solutions and experiences for patients, HCPs, and the industry.

Klick Co-founder and CEO Leerom Segal

Klick is obsessed with building a culture that attracts and engages leading minds and is passionate about health and doing meaningful work.

Klick's dedication to disrupting the status quo is captured in the New York Time's bestselling book The Decoded Company, in which Leerom Segal, CEO and co-founder, and his colleagues outline the six principles they've used to decode work and unlock the maximum potential of their talent and share success stories from other organizations that have embraced this approach. The Decoded Company is an actionable blueprint for any company that wants the best from its people, and isn't afraid of radical approaches to get it.

Mr. Segal, a multiple PharmaVOICE 100 honoree, has also been named Entrepreneur of the Year by the Business Development Bank of Canada, won the Young Entrepreneur of the Year award from EY, and was named to Profit Magazine's Hall of Fame as the youngest CEO ever to lead a nonprofit company. Co-authors include Aaron Goldstein, co-founder of Klick who is also a senior certified project management professional; Jay Goldman, managing director of Sensei Labs; and Rahaf Harfoush, who is the author of several books, including Yes We Did and was a contributor to the best-selling Wikinomics and Grown Up Digital.

This book takes the Klick Health culture engine, centered around its intranet, Genome, and shows how using big data insight activities on a company's workforce can work just as well as it does for customers.

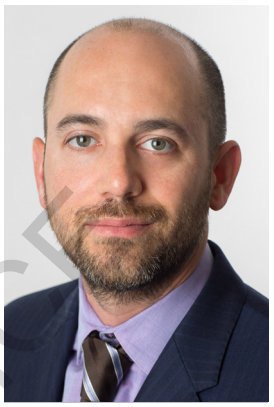
Klick's data-driven, people-centric approach to business management, has earned it multiple awards over the years. In 2015, the agency was named a Canada's Best Managed Company for the seventh consecutive year. Program sponsors are Deloitte, CIBC, National Post, Queen's School of Business, and MacKay CEO Forums.

Klick Health also has been recognized for having the Talent Acquisition Department of the Year for a small company by ERE, a leading authority for human resources and recruiting professionals.

In particular, ERE pointed to Klick's innovative experiential recruiting campaigns and the fact that the company has dedicated Culture & Engagement team advocates, who guide job candidates through the interview process and help ensure a positive candidate experience. PV

Everyday Health
PERSONALIZED CONSUMER HEALTH INFORMATION

Allowing Consumers and Physicians to Stay Informed



Everyday Health CEO and Co-founder Benjamin Wolin

The company's commitment to providing a personalized experience for each consumer starts with up to 5,000 pieces of information.

Starting with only three people working around a kitchen table in Brooklyn to today's 500-plus person company that successfully managed an IPO in 2014, Everyday Health has transitioned from an online publisher to a digital health marketing solutions company.

The company's portfolio consists of about 25 health and wellness properties, each focusing on a particular area of the health and wellness spectrum. The content and tools span topics, including critical health conditions, pregnancy and parenting, medical news and conferences, and diet and fitness.

Everyday Health has a database of more than 65 million registered users, which allows the company to identify and respond to customer needs while using the most advanced technology to provide an optimal content experience for all who interact with the site. The company's approach to product development and editorial content stems from the recognition that consumers are searching for relevant and credible health information, and that healthcare professionals and caretakers need quick access to constantly evolving research and information. The company has invested heavily in its product and technology teams to ensure that the roadmaps and designs are nimble and innovative enough to deliver on what users need.

Predictive risk algorithms supplement self-reported disease information so that Everyday Health can deliver the right information to the right user. The company's portfolio approach with properties such as MedPage Today, Dr. Sanjay Gupta, Mayo Clinic, and What to Expect is supported by a multi-channel delivery system that provides information via the web, mobile devices, video or through social media. The company's commitment to providing a personalized experience for each consumer who relies on the site starts with up to 5,000 pieces of information that can be tracked. Securing data from surveys, diet/fitness journal entries, quizzes, and media activity allows the company to develop personalized action plans to empower and inspire people to get and stay healthy. Supporting content such as recipes, condition articles, expert videos, and message boards ensures continued engagement and is promoted via personalized newsletters.

Physicians also benefit from data and analytics, as Everyday Health can customize the information and news they are receiving in their particular specialty. With two-thirds of all practicing physicians in the U.S. using the portfolio, the company can deliver breaking medical news as well as insights and information from the more than 130 medical conferences around the world.

With the ability to collect and analyze data from its audience, Everyday Health can bring value to its advertisers. Real-time data and analytics allow the company to deliver qualified users to the appropriate marketing programs within the portfolio and to effectively measure and understand what users are engaging with. The company can then look at how the users are impacted.

The company has an internal research capability that includes a 50-plus person team boasting seven patents and four Ph.D.s. The company also works with Cornell University and the University of Notre Dame and has strategic alliances with leading research companies including IMS Health and Nielsen Catalina Solutions.

The company strives to create a culture that encourages and rewards imagination. Employees develop innovative ideas that can benefit thousands of people and translate into marketable business opportunities. For example, members of the data sciences team entered into a competition resulting in the development of the Flu Map. PV

Everyday Health's goal is to engage audiences with premium health and wellness properties and then use its data and analytics expertise to deliver highly personalized user experiences and efficient and effective marketing and engagement solutions.

Tunstall Americas Contact Centers

connect patients, providers, payers, and life science companies to enhance care delivery and increase health outcomes. These value-added programs build brand recognition and loyalty with patients and healthcare providers.

Helping hospitals, clinicians, and pharmaceutical companies improve patient access and service

Tunstall

For more information on our connected health services, please contact
Lou Shapiro, Senior Vice President, at 401-952-8283 or louis.shapiro@tunstall.com

www.tunstall.com

RTI International NEW MODEL FOR COLLABORATION

Actionable Insights

RTI International, an independent, nonprofit institute that provides research, development, and technical services, has created a new model for collaborative problem solving and idea generation. RTI is one of the world's leading research institutes, dedicated to improving the human condition by turning knowledge into practice.

The organization's Innovation Lab works with industry partners in interactive, participatory, team-based working sessions to foster an idea laboratory. The labs support cross-pollination by convening individuals with a diversity of perspectives to consider barriers to innovation and opportunities for new product application and development. Participants include representatives from companies who by design offer distinct vantage points within and across firms — university thought leaders, entrepreneurs, ethnographers, designers, RTI researchers, and others.

Innovation Advisors work with business clients to provide insights, analysis, and connections to identify growth opportunities, commercialize emerging technologies, and transform communities.

The Innovation Labs explore which solutions might provide lasting impact and seek to solve complex problems that require integrated solutions. Framed by consideration of trends, industry drivers, and futurist thinking, RTI Innovation Labs also help surface precompetitive and longer-term opportunities.

Some recent lab innovations include a Peanut Allergen Test Strip, an On Demand Solar Thermal Energy Generator, TBIRD, Traumatic Brain Injury Rapid Diagnostic, and the RTI Social Frame, a customizable, research-driven approach to analyzing social media data.

RTI also sponsors an internal annual Innovation Showcase that highlights the creativity and most promising research of its staff members and encourages collaboration across the institute. Winners of the Innovation Awards are nominated by their research groups and selected by a committee of RTI Fellows.

Beginning in 2012, a Creative Disruptors group has sponsored annual Ideathons, similar to hackathons, that then selects projects to receive seed funding and participate in a more formal Idea Incubator. A 2014 survey of employees identified barriers and facilitators to increasing participation in innovative activities. A new Innovation Fund was established to support potentially breakthrough ideas that can lead to new approaches, services, and products. Internal research and development funding is also available to support small employee-initiated projects.

One of RTI International's recent initiatives is to develop an interactive, electronic decision tool to help patients better understand clinical trials and what they involve. The tool provides information required by institutional reviews boards to obtain informed consent in an engaging way.

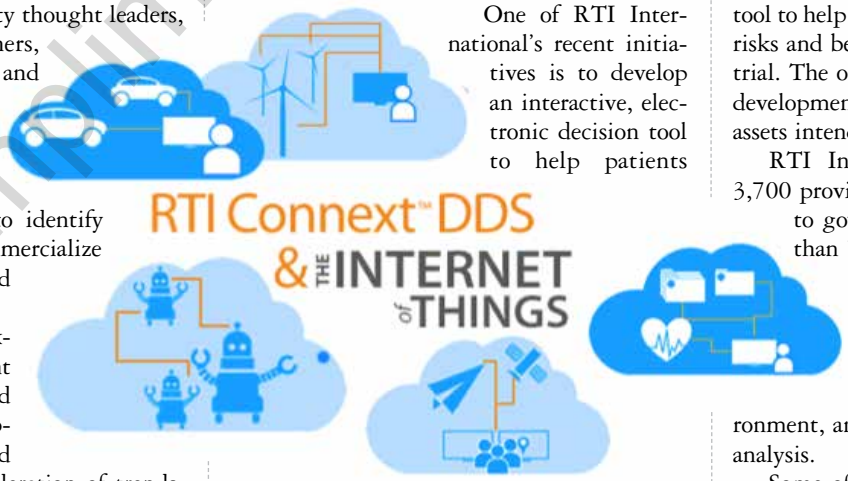
Currently, the tool is tailored to individuals with developmental disabilities (fragile X syndrome). In the formative stage of the project, RTI explored how individuals with fragile X syndrome are using technology and how it can be devised to meet their health-related decision making needs. This data heavily influenced the content and interactive elements. For example, users shared that they enjoy interactive sorting activities on tablets. Therefore, RTI created a sorting component to the tool to help people think through the potential risks and benefits of participating in a clinical trial. The organization has completed content development and is exporting the graphical assets intended for a mobile browser.

RTI International's staff of more than 3,700 provides research and technical services to governments and businesses in more than 75 countries in the areas of health and pharmaceuticals, education and training, surveys and statistics, advanced technology, international development, economic and social policy, energy and the environment, and laboratory testing and chemical analysis.

Some of RTI's 2014 achievements ranged from improving sanitation in developing countries to measuring and assessing healthcare and education around the world, to further developing clean energy technology.

RTI's President and CEO E. Wayne Holden

RTI sponsors an internal Innovation Showcase that highlights the creativity of its staff members, and an innovation fund was established to support breakthrough ideas.



The RTI Innovation Lab is a new model for collaborative problem solving and idea generation.

THE FUTURE OF CLINICAL DEVELOPMENT IS OURS FOR THE MAKING.

PRAHEALTHSCIENCES

COMPREHENSIVE PHASE I-IV BIOPHARMACEUTICAL DRUG DEVELOPMENT

At PRA Health Sciences, providing innovative solutions for our clients is what we do. But innovation just for the sake of innovation isn't why we do it. Side-by-side with our clients, we strive to move drug discovery forward and develop life-saving and life-improving drugs. We help change people's lives for the better every day. It's who we are. Innovating to help people is at the heart of our process, but it's even more than that. It's also our privilege.

www.prahs.com

Cognizant BUSINESS ACCELERATOR

Bringing Employee Ideas to the Forefront

Engrained in Cognizant's DNA is a belief that those who challenge the way they work today will lead the way tomorrow. With a passion to make a difference and to encourage breakthrough thinking, Cognizant has institutionalized an in-house platform called Thought Exchange, which encourages QA professionals to share newer ideas. These ideas are then owned and shaped to solutions by centers of excellence (CoEs). This is one source for Cognizant's innovative solutions, including ADPART, a model-based test design product that interlinks business process with testing; fastest, a cloud-based on-demand software testing service that enables pharmaceutical companies to test their applications online and swiftly scale to meet the volatile requirements without having to invest in tools, infrastructure, or workforce; as well as numerous solution accelerators.

Cognizant also boasts an Emerging Business Accelerator (EBA), which pushes the frontiers of innovation and to make sure the solutions keep challenging what's possible. The EBA is organized into three areas: digital technologies, an innovation ecosystem, and business accelerator. The business accelerator is another example of how Cognizant supports employee ideation. The company sponsors internal entrepreneurs, providing people, capital, and support to create industry-specific solutions.

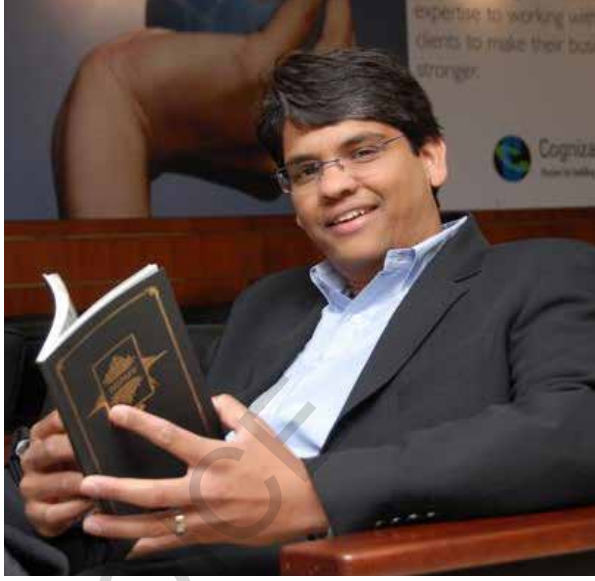
In addition to employee-led initiatives, many of the company's solutions are jointly owned and managed by its clients and some with its alliance partners. At present, there are more than 1,500 concepts being currently worked upon by Cognizant.

Cognizant consciously emphasizes on sharing its learning and experience with the global community, to enrich the future trends. For example, Cognizant's QE&A summits help the company's experts interface with the market helping to understand trends and challenges faced by clients in the quality space.

To keep its talent pipeline primed, Cognizant, which is a provider of information technology, consulting, and business process outsourcing services, has pioneered the concept of defining career paths for testing professionals by creating unique role-based career frameworks for its associates with its Cognizant Career Architecture program. The company has established clear career tracks for its testing professionals for progression on their domains, technical expertise, project management, product management, and consulting roles.

Cognizant's forward-thinking approach to innovation, people management, use of corporate assets, quality of product/services, among other attributes has been recognized by Fortune magazine, which named it to its World's Most Admired Companies list for the seventh year in a row. The company has also been named to Information Week's Elite 40.

An example of Cognizant's commitment to the industry is demonstrated by its philanthropic endeavors, including 34 grants awarded to after-school, in-school, and summer programs at 54 sites across the U.S. through its Making the Future education initiative. Designed to inspire interest in STEM (science, technology, engineering and math) education among students from grade school through high school, the initiative supports hands-on learning opportunities that promote creativity, problem-solving, collaboration, and self-expression. The 2015 grants will provide more than 5,000 young learners with access to 250,000 hours of making activities focused on STEM topics, including electronics, robotics, computer programming, digital fabrication, 3D printing, and wearable technology. PV



Cognizant CEO Francisco D'Souza

Our Emerging Business Accelerator helps identify trends and ideas, including the most promising ones across new technologies, delivery models, and markets.

We've separated groups of specialized medical communities.

Choose only what you want.

Cardiologists | Oncologists | Psychiatrists | Pharmacists | Medical Directors

Because cardiologists are different from pharmacists, and oncologists are different from psychiatrists, Skipta is different from other online medical networks.

Skipta is a vibrant network of more than 30 highly-specialized communities, created to allow like-minded healthcare professionals to connect and collaborate with colleagues in their field to provide better care.

If your message is for urologists, why deliver it to neurologists? Strategically engage, educate and inspire medical professionals with pinpoint accuracy and efficiency.

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SKIPTA

Our specialty is connecting yours.

Exco InTouch EMPOWERING PATIENTS

Creating Connections Through Technology

exco intouch

Healthcare at your fingertips

From its outset, Exco InTouch has endeavored to break the mold of traditional clinical technology deployment, and later healthcare services, by designing services around the needs of the patient and integrating or developing the technology required to deliver on this goal.

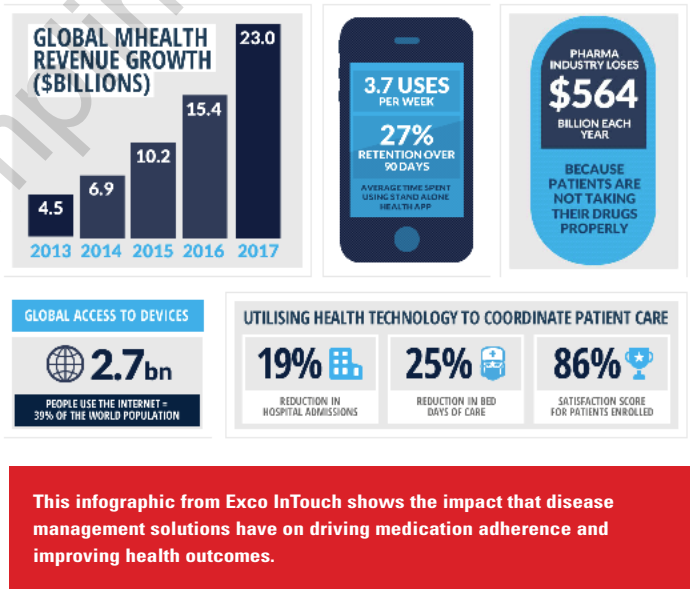
Over the past 10 years the opportunities to use different digital technologies have increased enormously. Initially, the company was formed to provide engagement services to clinical trial patients, using SMS text messages to patient's own mobile phones to remind and motivate them to comply with trial protocols. Now, there are new opportunities to engage with patients in different ways, using smartphones, tablets, and even Internet TVs or games consoles to deliver services into their daily lives, be it for relatively short periods of time in defined clinical trials or over extended timeframes as part of real-world healthcare programs.

Exco InTouch uses design thinking to help develop new solutions by looking across existing technological solutions to identify those that may add value, such as the latest app design concepts, consumer technologies, medical device advances, and even games consoles to seek the best solution for each population.

Exco InTouch's aim is to provide services that make a genuine and positive difference to outcomes, whether this is in the broader healthcare space or within the clinical development environment. To achieve this, its platform must continually evolve, and therefore the team plays an important role in identifying the best solutions to support patient populations and client requirements.

The company has created an environment where "no idea is a bad idea" and many of these ideas have significantly advanced its business capabilities.

One example is the development of the company's mDNA technology, a diagnostic and data handling tool, which was a concept developed by a single software developer who recognized the need to understand how and where patients were accessing its services to optimize the way content is delivered to each patient. The technology facilitates a BYOD (bring your own device) approach by interrogating the devices in use (mobile phones, tablets, and computers), and checking specifications against predefined criteria. Using this information, mDNA creates a key that is used through the system to identify a patient and his or her data, linking a device to an individual and ensuring that data submitted are attributable to the original registered device. Since its original development, the technology has now been expanded to conduct essential data analysis and segregation to enable protection of personally identifiable information (PII) required for the use of digital technology for health services in many countries around the world.



This infographic from Exco InTouch shows the impact that disease management solutions have on driving medication adherence and improving health outcomes.

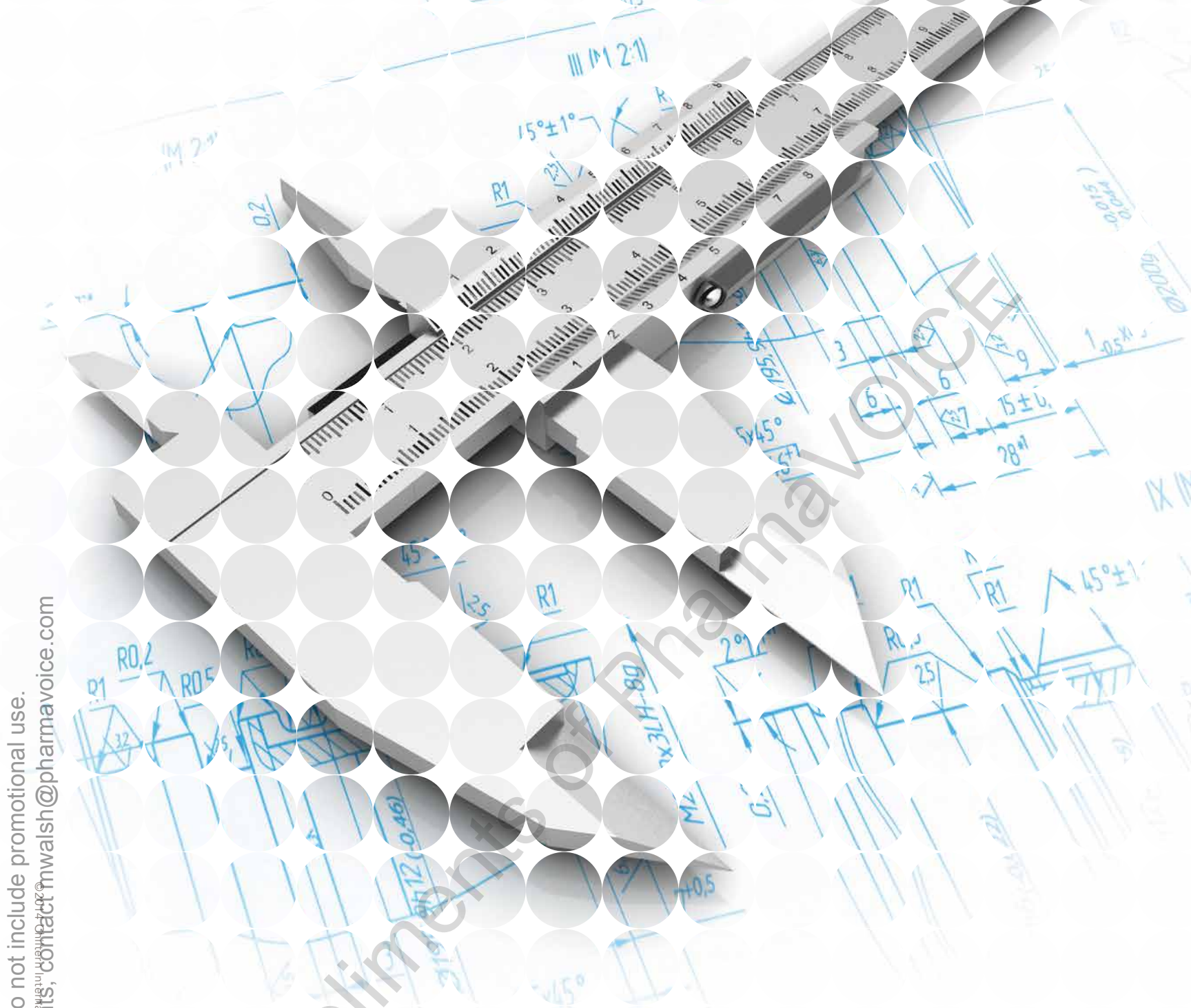
Exco InTouch CEO and Founder Tim Davis

We are trying to help individuals — patients is too generic a term for me — get better, or cope better with their condition, this is my motivation.

The desire to change the way patients experience care does not reside in the clinical research industry alone. In recent years the need to relieve pressure on healthcare payers has become increasingly significant and Exco InTouch saw the potential its platform offered to change the way patients receive healthcare and the value of improving outcomes through this approach to health payers. Therefore, it adapted the platform to provide support to help patients with long-term conditions (and their caregivers) manage their care.

In 2013, through its partnership with AstraZeneca, Exco InTouch developed the ground-breaking Me&MyCOPD program. The program gives the enrolled patients the opportunity to access personalized coaching and real-time information about their disease and treatment via their mobile phones or other Web-enabled devices, and to use digital technology to securely collect, transmit, and review their own clinical data. As a result, the program ultimately leads to patients being able to better control their condition and healthcare professionals to make more informed decisions and tailor care pathways. This translates into improving patient welfare and outcomes and quality of life by reducing the number of unplanned hospital admissions and the frequency and severity of exacerbations and decreasing the overall cost of treatment.

Exco InTouch has been recognized as an honoree in the 2014 Global Digital Health 100 from The Journal of mHealth. Companies selected to the list fulfill criteria that mark them out as innovators in the field of mobile and digital health. PV



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CHILTERN

Designed Around You

Ogilvy CommonHealth Worldwide CHANGING BEHAVIOR

Opening Minds to Better Health Decisions

Ogilvy CommonHealth Worldwide President and CEO Matt Giegerich

The company's solutions-oriented approach puts clients' needs at the center and draws from the full range of contemporary healthcare communications — all with digital innovation at the core.

As the health behavior change experts of Ogilvy, Ogilvy CommonHealth Worldwide is focused on gaining and acting upon customer insights that lead to deep understanding, which in turn leads to the ability to create experiences that educate, motivate, and inspire. One of agency's core principles, called the Big IdeaL, begins with a simple statement and challenge: "We believe the world would be a better place if..." Throughout the organization, employees believe that the world would be a better place if they could bring out the inner greatness in brands, organizations, and their people. The agency's goal is to build brands that drive behavior change to improve health outcomes worldwide.

Ogilvy CommonHealth Worldwide is a community of experts in health behavior change who are dedicated to creating inspiring solutions and delivering programs to address healthcare challenges by putting people at the heart of what they do. The agency offers a specialized suite of healthcare-specific marketing services within the brand-building environment of the Ogilvy global network. This potent combination manifests itself in fully integrated, digital-at-the-core, multidisciplinary campaigns measured by both their pervasive creativity and their effectiveness.

Ogilvy CommonHealth Worldwide's ability to generate insights is the cornerstone in its development of behavior-change initiatives across all audiences: peer-to-peer, key opinion leader to practitioner, patient/caregiver and physician, nurse, NP/PA, pharmacist, C-suite, group practices, and third-party payers. The agency has developed proprietary research methodologies in computational linguistics, and in the video capture of real-time in-office clinical dialogue, analyzed by on-staff Ph.D. linguists. In addition, one of its latest innovations is a comprehensive social listening capability, including online access to a healthcare professional cohort that can be leveraged to establish baseline knowledge or behavior, real-life clinical practice, and a wide range of behavior-change insight research parameters.

To encourage an intrapreneurial approach to developing results for clients, Ogilvy CommonHealth applies the principles of design thinking to generate strategic and tactical solutions. For example, its proprietary brainstorming process, RedStorming, is a structured approach focused on innovative idea generation that is inspired by a challenge derived from deep customer insights. The goal is to deliver practical and creative solutions that integrate the capabilities of technology and the real-world needs of various target audiences. The agency also applies design thinking to its development of creative ideas by first defining the business challenge, then engaging several creative teams to ideate, experiment, and evolve solutions that result in a brand experience that leverages the full benefits technology has to offer.

One example of the agency's ideation process is Element Access, which is a first-in-class innovation for pharmaceutical manufacturers. The product was derived from a problem-solving exercise for a single client around a portfolio-specific challenge, which led to a breakthrough for the whole industry.

The problem required the agency to design and integrate a pull-through solution built into the salesforce's iPad-based detail aid. The team built a dynamic data display that aggregates client data feeds into one simple formulary display that shows physicians the top plans they see in their practice, along with those plans' tier status, share of business, and average co-pay. It is a reimbursement detail enabling a sales rep to message simply, easily, and more importantly locally. Element Access is helping thousands of sales representatives and reimbursement teams around the country to be more effective in their client interactions.

Another agency innovation — Managing the Dialogue — stems from the agency's award-winning analytics team and behavioral insights group. Managing the Dialogue In-office Linguistic Research is a methodology that allows companies to be the fly on the wall in physicians' office at the moment of truth when HCPs talk with their patients. The process allows for the capture of all closed-door interactions with patients and their healthcare providers, by having a researcher on site to see what goes on beyond the visit. Following the office visit, patients are interviewed to gain insight into what they understood from the visit, what they took away overall, and what they plan to do moving forward regarding treatment. At the end of the day, the physician is also interviewed about the visit to gain his or perspective. All components are transcribed and the data are analyzed using sociolinguistic techniques, comparing and contrasting where patients and their healthcare professionals are aligned and where there are gaps in communication. Patient dialogue tools are often created following this research, but the opportunities are endless as far as what can come from a study like this.

Among the agency's other innovations are Day-in-the-Life Patient Ethnography, a process to gain insights by observing patients and their loved ones performing daily activities, as well as making treatment decisions; Online Ethnography, a social listening insights report that provides a deep understanding of social media trends and ethnographic insights; eKOL Identification, which leverages patient and professional targeted platforms and social media monitoring resources to identify prevalent posters, general demographics, channel statistics, and volume and topic trends; and Ogilvy TargetIQ, an analysis tool, introduced in 2014, that solves the audience targeting challenge for HCP and professional campaigns. PV

ElMindA
TRANSFORMING NEUROSCIENCE

Visualizing the Brain, Revolutionizing Treatment

ElMindA, creator of the Brain Network Activation (BNA) technology, is being lauded for its innovative approach to neuroscience and management of brain disorders. The company was included on Fast Company's annual list of the World's Most Innovative Companies that ranks companies that are radically changing an industry, consumer habits, and assumptions.

ElMindA was founded in 2006, with the vision of revolutionizing the management of brain disorders and injuries, by transforming state-of-the-art neuroscience into bed-side clinical practice, opening a new window into a brain's functionality.

ElMindA's BNA technology is based on noninvasive recordings of multi-channel EEG event-related potentials (ERPs), and a multidimensional analysis of such recordings by advanced algorithms. The BNA algorithms use sets of signal processing and pattern recognition techniques to seek and map activated neural pathways to assess cognitive function. By projecting the individual data points into clusters, BNA reveals 3D images that represent high-resolution functional neural pathways. These can aid clinicians with profiling brain functionality and assist with changes in disease progression and response to therapeutic interventions.

ElMindA's BNA platform provides a non-invasive tool for the visualization and quantification of BNAs of specific brain functionalities.

In August 2014, ElMindA announced that BNA was cleared by the FDA for the analysis of brain functional network activity, initially indicated for 14 to 24 year olds.

ElMindA research showed, for the first time, the ability of BNA to map pain pathways in the brain and objectively and sensitively differentiate between a drug effect and a placebo effect on the brain — previously only possible by subjective measures.

ElMindA's innovative approach and supporting data have led to partnerships with top pharmaceutical companies and leading neurological and psychiatric institutes around the world. PV

Flagship Ventures
CREATING INNOVATIVE COMPANIES

Recognizing Entrepreneurialism

Flagship Ventures is an organization dedicated to realizing entrepreneurial innovation — innovating, inventing, iterating, founding, and nurturing to build great companies with novel technologies that can solve big problems and add significant value.

Flagship creates highly disruptive companies that have the potential to solve some of the world's biggest healthcare challenges and is shaping the future of breakthrough healthcare discovery by developing fundamentally transformative and sustainable innovations in therapeutics and health technologies.

Through Flagship's VentureLabs unit, an institutional platform for accelerated innovation and parallel entrepreneurship — the company determines how new technologies can solve global problems and transform large markets in human health, creating sets of opportunities that are effectively untouched, in essence true white spaces. The Flagship team works together to invent or identify breakthrough technologies that address significant unmet medical needs. The company uses a Darwinian process for innovation to explore ideas, apply extreme selection pressure, form venture hypotheses, and move the most promising ideas to the investment stage to become start-ups, resulting in companies that are poised to make significant positive impacts on the lives of patients. Throughout the phases of the process — exploration, proto-company, startup — the Flagship team consistently brings discipline and an investment mindset, which has resulted in the creation of more than 25 companies, including Moderna Therapeutics, Seres Health, and T2 Biosystems.

Flagship is also disrupting the traditional R&D approach to innovation by providing corporations with early exposure to breakthrough innovations and technologies with the potential to contribute to a company's innovation pipeline. Flagship's strategic collaboration with Merck Research Labs, formed in 2012, is an example of how it is fostering life-sciences innovation at its formative stages.

The Flagship team is comprised of scientists, engineers, doctors, inventors, and executives, all of whom have business, management, and leadership capabilities, fostering diverse thought processes while developing new ideas.

The company sees the value in working with innovative people, and each year runs a fellowship program for graduate students to further expand the company's thought-leader base. Students work with the Flagship team over a 12-week period, exploring new ideas and testing venture hypotheses that may lead to the creation of companies. PV

Atlantis Healthcare HEALTH PSYCHOLOGY

Changing Patient Behavior for Better Health Outcomes

ATLANTIS HEALTHCARE

Medication nonadherence represents almost $300 billion in avoidable healthcare expenditures in the United States, according to New England Healthcare Institute research. Atlantis Healthcare, which was founded in 1993 by a team grounded in traditional loyalty marketing, is using its understanding of consumer behavior to create a new business model relevant to healthcare, specifically, how to talk to patients to influence their behaviors using health psychology based on a strategic and validated approach from academia.

In a May 2014 paper — Applying COM-B to medication adherence, A suggested framework for research and interventions — published in The European Health Psychologist, Dr. Christina Jackson, Ph.D., lead author and senior health psychology specialist at Atlantis Healthcare, examined how psychological modeling can be used to support patients in using their treatments as prescribed. The COM-B model, first published in 2011, proposes that an individual's behavior is influenced by many factors, all of which can be grouped into three components: motivation, capability, and opportunity. The model was developed with specific interventions to address each component. Dr. Jackson and her co-authors were the first to apply the COM-B framework specifically to examine behaviors that drive nonadherence.

Traditionally, interventions have been based on two limited approaches: one-size-fits-all and reminder-based programs. The latter assumes the main drivers of nonadherence are that people have insufficient information or they simply forget to take their treatments. According to Atlantis Healthcare's team of health psychology experts, this is a huge over-simplification. Addressing nonadherence requires a focus on the patient, which goes beyond providing reminders and prizes.

Atlantis Healthcare works with world leading health psychologists to develop evidence-based approaches to understanding the predictors of adherence, and the most effective techniques for behavior change.

Atlantis Healthcare's programs deliver a personalized experience targeted at each patient's particular issues, which allows the company's experts to deliver the right message to the right person at the right time. PV

Create NYC A NEW AGENCY MODEL

Creating a Hub of Efficiency

CREATE NYC

Create NYC is an advertising agency that does more with less. The agency has a unique on-demand model and flat-fee approach. Focused on efficiency, the agency taps into its Creator Hub, a hand-selected database of more than 100 experienced creative talents of all disciplines in the business, for each project. These seasoned professionals are available on demand and work for a flat fee. This caliber of talent structured without extra layers of management encourages leadership and innovation at the right levels. To support innovation and the efficiency model, all staff members are directly incentivized to deliver quality work on time and within budget. The account team is structured to provide a single-point of contact support to each client, making communication streamlined, consistent, and accountable.

To date, more than 95% of all Create NYC projects have been delivered at the contracted flat-fee rate and all clients including those from its first projects, continue to rely on Create NYC for on-demand support.

Create NYC is disrupting the marketplace by providing the healthcare industry with a new agency option that can meet the challenges of today's changing industry.

In February 2015, Natalie McDonald, president and founding creator, won the 2015 Enterprising Woman of the Year Award from Enterprising Women magazine. The award recognizes women business owners who have demonstrated that they have fast-growth

Create NYC Founder Natalie McDonald

Create NYC employs an on-demand agency model to service the healthcare industry with a specific focus on post-launch brands.

businesses, mentor, or actively support other women and girls involved in entrepreneurship, and stand out as leaders in their communities. Many of the honorees also serve as leaders of the key organizations that support the growth of women's entrepreneurship. PV

ALL HUSTLE. NO BUSTLE.

The only constant in the healthcare industry today is the need to do more with less. That's why **Create NYC** was designed with efficiency at its core. With our innovative, on-demand model and flat-fee approach, we deliver quality promotional materials in less time with smaller budgets, ensuring that the brands we support meet their aggressive goals.

Are you ready for more hustle and less bustle?
All it takes to get started is just one project. Contact us today at myfirstproject@createnyc.com

CREATE NYC

www.createnyc.com

HealthXL
CREATING MOONSHOTS

Catalyzing Collaborations

Based on a company culture of collaboration, HealthXL is a global clearing house for innovation in healthcare. The company is focused on catalyzing a collaborative environment between leading brands in healthcare and the most exciting tech companies to improve the lives of millions of people. Together with its partners, HealthXL establishes audacious goals, which it calls moonshots, to work toward within healthcare. Then the company searches for innovators in digital health that it and its partners can work with to achieve those moonshots.

The company is building an ecosystem for entrepreneurs in healthcare by involving all stakeholders.

To understand customer needs HealthXL works with its clients as partners. The work is based on the problems that clients are aware of, are actively looking for a way to solve, and are willing to resource to get those problems solved for them.

The model is unique; the company's partners actually vote for the problems they are interested in solving. The shortlisted companies are then invited to a community call, they pitch what they do, and HealthXL's partners and advisors — all top healthcare leaders and innovators — vote for the entrepreneurs. The ones who receive the most votes are invited to invite-only quarterly events, called HealthXL Global Gatherings. This year the company is hosting such events in Dublin, Boston, and Munich. At these events, the company brings together providers, insurers, pharma, patients, innovative high-growth companies and other key stakeholders to review together the best opportunities for digital health. Among HealthXL's partners are Bupa, Cleveland Clinic, Becton Dickinson, IBM, ICON, ResMed, Janssen Healthcare Innovation, Linde Healthcare, Novartis, Partners HealthCare, Silicon Valley Bank, EY, SoftServe, and Hermitage Medical Clinic.

HealthXL's business model and the way it works are unique, therefore there are no rules to be followed and that makes it very innovation friendly for all employees. The company experiments with different approaches and techniques and picks the ones that give the best results. PV

HemoShear
FROM MICE TO MEN

Developing Transformational Tissue Systems

Over the past several decades, the pharmaceutical industry has cured many diseases in mice. But mice and people are not the same. Traditional, industry-accepted methods have led to unsustainably high failure rates and costly failures, while patients wait for affordable new therapies.

HemoShear's transformational tissue systems and disease models are game changers for the pharma industry. By understanding the pathophysiology of human disease and translating this understanding into better target identification and drug candidate selection, HemoShear is shattering the current, and old, paradigm that leads to clinical failure.

Getting back to the basics of human disease biology demands a new way to conduct drug R&D. HemoShear is implementing innovative business models to share in the successes of its partners, as well as conduct its own drug discovery in rare disease, which have poor treatment alternatives. HemoShear scientists work side-by-side with its industry partners, sharing expertise, leveraging each other's strengths, assets and experience, and tackling tough issues and speeding safer, more effective drugs to patients.

Real breakthroughs in drug discovery are possible when disease mechanisms are understood and drugs are developed with systems that accurately replicate human disease. The biotechnology company is recreating human diseases in the laboratory. The company's drug discovery work feeds its own pipeline as well as collaborations with pharma partners.

HemoShear's scientific expertise, biorespository, world-class computational biology team, and translational tissue systems enable the company to go deeper into the biology, uncover meaningful targets, elucidate mechanisms, and predict human drug responses in a manner not possible before.

HemoShear's translational tissue systems incorporate primary human tissue and physiological conditions that have a profound influence on human cell survival, tissue metabolism, and behavior. Accurate hemodynamic and biological transport conditions, multiple primary human cell types, and physiological or disease relevant tissue culture conditions are essential to recreating human disease biology.

Combined, these elements restore human biology and disease conditions, enabling understanding of disease mechanisms, differentiation of compound candidates, and selection of candidates that have superior efficacy and safety profiles.

The science upon which HemoShear is founded was born in the laboratories at the University of Virginia. From HemoShear's earliest beginnings, its co-founders actively engaged with the pharmaceutical and biotechnology communities, speaking with hundreds of industry scientists and executives to gain understanding of their greatest challenges and unmet needs.

James Powers, CEO, was named to the PharmaVOICE 100 based in part on his leadership of the company and how he encourages new ideas and independent experimentation. The company's "Chrome Cone" award is presented annually to the staff member who embodies HemoShear's innovative spirit. This person is translational, creative, innovative, passionate, team-oriented, thoughtful, persevering, focused, successful, ethical, tolerant, trustworthy, and respectful. Together, these attributes allow the company to achieve scientific excellence. PV

Project Data Sphere
INCREASING TRANSPARENCY

A Collaborative Resource for Trial Success

The Project Data Sphere database allows researchers to share, integrate, and analyze patient-level, comparator arm, Phase III cancer data.

In an environment where researchers have historically been very protective of their data and development costs to find new and better therapies are increasingly high, the Project Data Sphere is taking significant steps toward using broader data transparency to increase research innovation for the good of patients. As more organizations subscribe to this approach of driving increased innovation through increased collaboration, the question of providing clinical trial data will become "why not?" instead of "why?"

Project Data Sphere provides a single, free-of-charge, easy-to-use, online platform (projectdatasphere.org) to share, integrate, and analyze data sets from Phase III cancer trials. The nonprofit organization's platform serves as a resource for researchers from all walks of life and provides an easy-to-use interface and analytic software to aid in data preparation and analysis as well as exploration and reporting. In addition, the platform includes an infrastructure for researchers across organizations to work together using social media-like tools for collaboration.

Since its launch in April 2014, there is evidence that the platform has helped to move forward the concept of data sharing to improve research and ultimately, patient outcomes, including more than 10,500 patient lives represented in the database and additional new data sets are already slated for upload over the next several weeks; almost 300 users, representing 22 countries, have become authorized users; research findings from platform data have already been publicly presented and additional, peer-reviewed publications are in the process of being prepared/submitted; and all of the pioneering data-providing organizations have renewed and redoubled their commitment by providing additional data, and four new data providers are in the process of sharing their initial data sets now.

The organization has been designed to be flexible and adaptable and innovation often comes from personal experience and relationships in the industry. With a strong network of collaboration across all sectors, despite its small size, the synergy created by the wide collaboration provides the opportunity to foster innovation such as the "Prostate Cancer DREAM Challenge." PV

Skipta
SOCIALIZING MEDICAL COMMUNITIES

A Network for Healthcare Professionals

Skipta's growing network of more than 30 specialized online medical communities for verified healthcare professionals enable vibrant clinical collaboration within private and secure platforms per physician specialty, healthcare profession, or disease state.

Skipta is reportedly the only social networking platform that has created specialized online medical communities for healthcare professionals that enable collaborations on the topics most relevant to them.

Skipta's network welcomes verified professionals, including physicians, pharmacists, nurse practitioners, and other healthcare professions, ensuring that a wide range of professions enter the conversation, using their unique perspectives on patient care.

The Skipta network was built on a platform that allows for constant evolution and innovation, allowing communities to evolve based on the activity of their members and partners. Each community uses advanced, secure social networking technology specifically designed for enhancing the collaboration between healthcare professionals.

For example, Neurologist Connect was developed as the first and only professional networking platform for neurologists. For participating life-science companies, it offers unique access to high-value, difficult-to-reach customer segments and sets them apart by contributing to a proprietary channel that engages the neurologist community, which currently boasts a growing membership base of almost 40% of all neurologists in the United States, with every neurologist visiting, on average, at least once per month. PV

Neurologist Connect is the hub for verified neurologists to communicate and collaborate.

Theranos
A SINGLE DROP WITH HUGE IMPACT

The Future of Lab Testing

theranos

Theranos is working to shape the future of lab testing. Now, for the first time, its high-complexity CLIA-certified laboratory can perform tests quickly and accurately on samples as small as a single drop.

Elizabeth Holmes, CEO, founded Theranos in 2003 after leaving Stanford to build a company around her patents and vision for healthcare. The mission is to make actionable information accessible to everywhere in the world at the time it matters most. Theranos is working to enable early detection and intervention of disease.

Theranos, and Ms. Holmes, are being recognized by Inc., Fast Company, and others as true disrupters. The company has a $9 billion valuation based on an inexpensive, comprehensive blood test using a simple pinprick. At age 31, she owns more than half of the company, making her America's youngest female self-made billionaire.

Theranos offers a full spectrum of lab tests certified in its CLIA laboratory that cover a full range from blood, urine, and other samples from just a small few drops. This eliminates the need for larger needles and numerous vials of blood required for many diagnostic lab tests.

Theranos' minimally invasive sample collection serves patients such as those receiving oncologic, pediatric, and other in-patient treatment requiring frequent blood draws. Theranos tests are also priced at 50% of Medicare reimbursement rates or less.

Theranos' patented technology can analyze samples as small as 1/1,000 the size of the typical blood draw.

Since the company makes it easy to measure the body's information at the needed frequencies, doctors can see small changes in test results as they emerge over time. In doing so, Theranos is working to help patients and doctors track chronic conditions and provide insights into the early detection of a broad range of medical conditions.

Theranos can perform lab tests on samples as small as 1/1,000 the size of a typical blood draw.

Its Theranos Wellness Centers are designed to make the experience as easy and comfortable as possible. Patients can make an appointment or walk in at their leisure with their doctor's order form. Everything is designed with patient's wellness in mind. PV

Organovo
3D BIOPRINTING HUMAN TISSUES

Changing the Shape of Medical Practice

organovo™

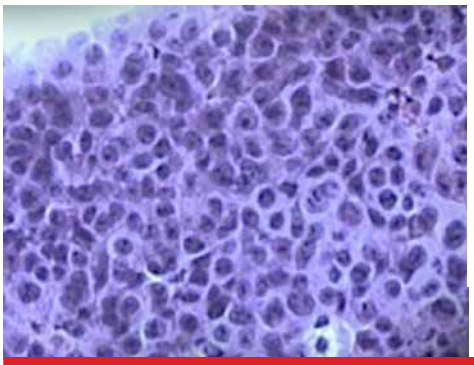
Organovo is credited with developing the world's first commercial 3D bioprinting technology platform. The goal is to build living human tissues that are proven to function like native tissues. With reproducible 3D tissues that accurately represent human biology, the company is enabling ground-breaking therapies.

Organovo believes that engineered tissues will someday be a routine source of therapy for patients with damaged or diseased tissue for direct therapeutic use to augment or replace damaged or degenerating organs. More than 114,300 people are waiting for an organ transplant. Last year, fewer than 5,000 transplants took place. About 18 people die each day waiting for an organ.

Organovo's near-term applications are to develop functional 3D human tissues for drug discovery and toxicology testing. The technology is able to create, without the use of scaffolding, 3D anatomically correct tissues with integrated microvasculature. This structural organization of the multiple cell types typical to tissue composition results in tissue-level responses and physiologic processes found in native biology.

Today, the company is working, both internally and with select partners, to fulfill the vision of building human tissues for surgical therapy and transplantation. The flexibility of its tissue engineering technology, and its proven application across a wide variety of cells, allows the company to target many different tissues.

Company leaders believe that as Organovo penetrates the toxicology market, its exVive3D Human Liver Tissue and service has a $100 million plus revenue potential in the future of a total addressable market of more than $1 billion. The company is planning a launch of 3D bioprinted kidney tissues in 2016.



The flexibility of Organovo's bioprinting technology allows the company to target many different tissues.

Organovo's NovoGen MMX Bioprinter was named one of the Best Inventions of 2010 by TIME Magazine. PV

Unum Therapeutics
THE GOAL: ONE CURE

A Single Cell Therapy

The vision for the leadership at Unum Therapeutics is to develop a single cell therapy — unum = one — that can augment the activity of multiple antibodies to treat many different cancers. The company's disruptive approach is to use a novel synthetic gene to direct a patient's T-cells to kill tumor cells in combination with tumor-targeting antibodies. Through its proprietary T-cell technology, Unum believes it can transform cancer treatment through the discovery, development, and commercialization of novel antibody-coupled cellular immunotherapies.

Unum, which was formed in late 2014, is moving very quickly to validate is proprietary Antibody-Coupled T-cell Receptor (ACTR) technology: starting a clinical trial in lymphoma patients only three months after its first financing. The Phase I clinical trial is evaluating ATTCK20, the combination of ACTR T-cells with Genentech's Rituxan, one of the earliest monoclonal antibodies to be approved by the FDA to treat non-Hodgkin's lymphoma. Researchers will test this concept at a variety of dose levels in patients with B-cell malignancies who haven't responded to Rituxan or who have relapsed after treatment.

The company is starting with a molecular form of the therapy that can be very quickly made and put into patients. Results from this trial support the next iteration: using a virus to modify patient cells. Further testing will drive the next cycle: a genome-engineered cell that can be manufactured at large scale. Information from each cycle drives the next.

The company's leadership is focused on solving big problems — curing, not treating, cancer — where Unum can have a real impact for patients. They understand the need for new solutions for patients and that means taking calculated risks to innovate and bring new approaches to bear.

Considered by analysts as an up-and-comer, Unum was named by Nature Biotech as one of 2014's Best Startups.

Unum Therapeutics Scientific Founder Dario Campana, Ph.D., M.D.

At the National University of Singapore (NUS), Dr. Campana developed the ACTR technology that forms the basis for Unum.

PHT
THE EPRO PIONEER

Blended Instruction Reduces Errors

With the founding of PHT, Dr. Stephen Raymond launched the electronic patient reported outcome (ePRO) industry, offering pharmaceutical pharmaceutical companies clinical trial technology and patient-driven eData systems to collect high-quality data directly from patients and clinicians.

PHT has perpetually innovated new technologies to give clinical researchers the tools to develop new therapies, treat disease, and improve patients' quality of life.

Back in 1995, PHT fielded the first LogPad studies and filed a patent for a "health monitoring system" using handheld devices to transmit data to a central server. Almost 20 years later, the company introduced Rater Training, which reduces rater errors and standardizes scale administration. The product is recommended by global regulators and endorsed by ISPOR. This blended instruction features customized instruction on each instrument's design and scales, with training specific to the instrument's electronic implementation. It is delivered in person, on-line, in groups or private settings for multi-protocol programs, with sponsor-specific certifications available.

All PHT solutions are based on customer demand and primary market data. In the case of Rater Training, PHT clinical scientists leveraged several design techniques to optimize the current solution, which was flat and ineffective.

In February, PHT announced that it was merging with ERT, a global solution provider of patient safety and efficacy endpoint data collection services. The transaction combines PHT's flexible eCOA platform and world-class customer service with the clinical trial technology and service offerings of ERT, creating an innovative and comprehensive solution for patient end-point collection and data analytics for global clinical trials.

PHT Corp. President and CEO Phillip Lee

Since joining the team in 2003, I have watched PHT develop into an industry leader, providing the most innovative technologies to collect patient-driven eData for the purpose of clinical research services.

Merge eClinical
DESIGN INSPIRED, DESIGN FOCUSED

Driving Site Efficiencies

Design is not just what it looks like and feels like. Design is how it works." — Steve Jobs

Merge eClinical embraces and has staked its market position on this philosophy. That and the fact that every study — no matter how large or small — deserves the benefits offered by information technology to improve safety, quality, and study outcomes.

To this end, the company has incorporated human principles into the development of its flagship platform, eClinicalOS (eCOS). The eCOS platform is a cloud-based system that offers all of the EDC and study support capabilities companies large and small need. It has a pay-as-you-go payment structure, which allows researchers to pay only for what they use with no long-term commitment or up-front investment. The SaaS model allows CROs, sponsors, and AROs of all sizes to tap into EDC technology that is affordable and intuitive.

Throughout the organization, a single passion fuels their collective work: to help clients manage studies with more control, convenience, and confidence than ever before to improve the human condition, one study and one patient at a time.

The eCOS platform is reported to be the only commercially available endpoint and adjudication module, which gives everyone in the process — sites, coordinators, and adjudicators — online access to every important study document. According to the company, at least one new study using eCOS launches every day. To date, more than 50,000 clinical research professionals have used the eCOS platform at 80-plus countries worldwide. More than 2 million patient records are contained with eCOS, and studies have been conducted in every major therapeutic area.

Clinical trial data can be accessed anywhere, anytime, through the cloud-based system.

Aprecia
MAKING PRINTED PILLS A REALITY

3D Technology Advances Product Formulations

Tablets and pills can be difficult for some patients to swallow. Helping these patients improve adherence is the mission of Aprecia, a specialty pharmaceutical company that has the rare opportunity to be the first at something and redefine a market: enhancing customers' experience with highly prescribed, high-dose medications.

Aprecia Pharmaceuticals was founded in 2003 with the goal of achieving commercial production rates for unique pharmaceutical dosage forms via advanced three-dimensional printing (3DP) technology. Powder-liquid 3DP is a novel technology that forms objects layer by layer and was originally developed at the Massachusetts Institute of Technology (MIT) in the late 1980s as a rapid-prototyping technique. While 3DP technology rights are currently licensed for a diverse range of industrial fields, pharmaceutical rights to MIT's 3DP process are exclusively licensed to Aprecia. This process stitches together multiple layers of powdered medication using an aqueous fluid to produce a porous, water-soluble matrix that rapidly disperses with a sip of water.

The company's technology is helping to bring easy-to-swallow medications to the market. In October 2014, the company filed an NDA with the FDA for its first product using its proprietary ZipDose technology, a formulation platform that enables medicine to swiftly disperse in the patient's mouth with a sip of water or other liquid. ZipDose products enable people to take their medications with greater ease, potentially increasing adherence and improving symptom management.

Aprecia plans to introduce new ZipDose products in the coming years, focusing first on the CNS therapeutic area, where there is a need for medicines that are easier to take.

Aprecia's leadership team is very involved in the actual research and actively entrenched in the pharmaceutical and healthcare communities. Their focus is not only the standard "we want to improve lives," but they want to do it in a way that brings options to those in need of different, unique approaches to their treatment plans.

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Booth #3.D16

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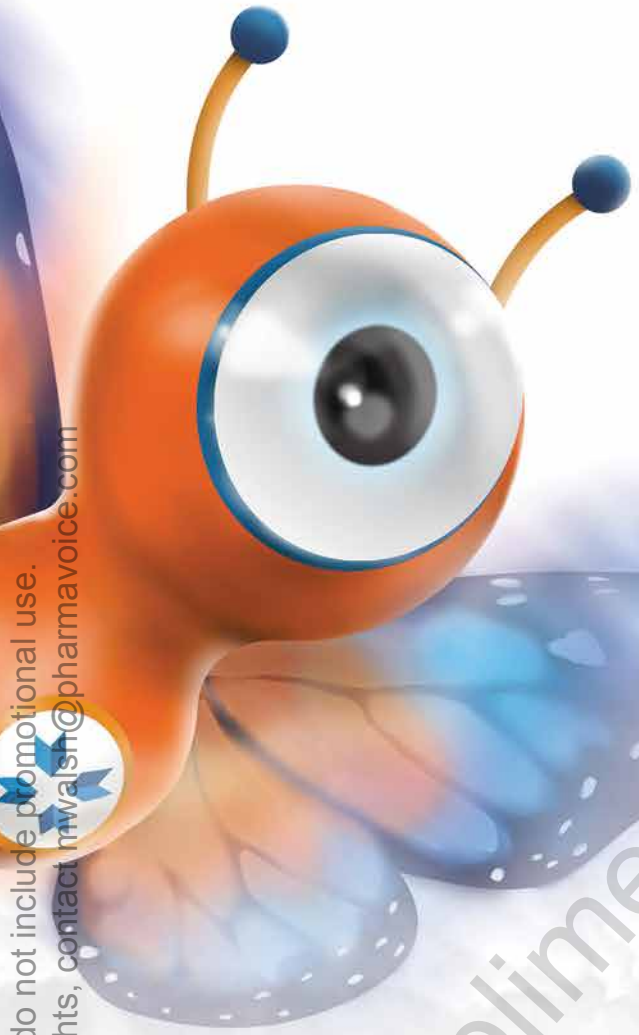
Where smart research goes to work.™



Have Trials Take Flight

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Integrated Features

eClinicalOS is a cloud-based IT solution that integrates everything you need for EDC and study support in clinical trials.

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Clinical Ink
AN ESOURCE PIONEER

Tackling One of the Biggest Hurdles to eClinical Trials: Paper

Long before the iPad, Clinical Ink's co-founders — Tommy Littlejohn, M.D., and Doug Pierce — envisioned a tablet-based software application that would look and feel like a paper document to the site user, but would capture, validate, and share data electronically with sponsors.

Clinical Ink was founded in late 2007 on the belief that the clinical research business model could be revolutionized by eliminating the last remaining hurdle to truly electronic clinical trials: the paper source. The vision was for a truly paperless clinical trial platform that would make clinical research faster, better, safer, and less expensive: the result was SureSource, which created a new market for eSource when it launched in 2011 as a solution specifically designed to help streamline clinical development by eliminating paper source documentation.

Clinical Ink combines its design thinking process with lean start-up techniques that ensure continuous innovation by guiding the evolution of SureSource, which the company bills as the industry's first purpose-built eSource solution, via iterative product releases and updates that incorporate new customer needs. For example, the company recently developed a more expansive range of SureSource technology/services to capture as much data electronically at the point of care as possible — everything from study start-up activities to device integrations to study submissions.

Doug Pierce, President and Co-founder, Clinical Ink

Our goal was to replace the paper source forms with electronic versions, which would be completed using tablets. We had to develop both the application and the market in which it would be used.

In September 2014, the company launched the SureSource Data Transformation Toolset, which automates manual data mapping and transposition processes, delivering submission-ready data faster and minimizing overall clinical development costs and timelines.

Clinical Ink was recognized by Gartner as a Cool Vendor for having significant disruptive potential. The company also was honored by Frost & Sullivan in September 2014 with North American eClinical Solutions Award for Entrepreneurial Company of the Year.

HealthCarePoint
MAKING THE RIGHT CONNECTIONS

A Global Network of More than 700,000 Healthcare and Clinical Research Professionals

If you think trying to break through company silos is challenging, imagine trying to overcome silos between industries. That was the daunting task that HealthCarePoint set out to accomplish when it began to create a system to breach the silos between healthcare and clinical research.

More than 13 years ago, global leaders from government, not-for-profit organizations, regulators, for-profit institutions, sponsors, and healthcare providers came together in recognition that the healthcare and clinical research industries were completely segregated.

Executives at HealthCarePoint knew that if they could connect industry stakeholders, they could create better lines of communication, have true collaboration, and exchange constructive ideas.

Operating under the guiding principle that true collaboration can only be achieved by creating innovation, transparency, and trust between organizations HealthCarePoint has created a global network of collaborators from every sector of the healthcare and clinical research industries.

One of outcomes of this collaboration is BlueCloud, which launched in February 2015, almost 13 years after its initial conception. BlueCloud is a collaborative network of healthcare and clinical research professionals with the tools and networking technologies to empower members to manage everyday operational, managerial, compliance, and standards processes by connecting healthcare and clinical research stakeholders.

The initial version of BlueCloud has been used in dozens of global clinical trials. These trials are being managed directly by sponsors and CROs, saving the industry millions of dollars.

The network now includes 700,000 healthcare and clinical research professionals, dozens of national and international entities, including 34 pharmaceutical, biotech, medical device, and other company sponsors; 14 clinical research organizations (CROs); and thousands of healthcare provider organizations.

Additionally, HealthCarePoint plans to donate this technology to national and international not-for-profit organizations, government entities, universities, investigator sites, ethical review committees, institutional review boards, hospitals and physicians' offices to enhance collaboration among all stakeholders in healthcare.

Parexel
THE JOURNEY AND MISSION

Simplifying the Process

PAREXEL®
YOUR JOURNEY. OUR MISSION.™

Parexel International, a global biopharmaceutical services organization, helps clients prevent and cure disease by supporting drug development efforts; it has helped bring 95% of the 200 top-selling drugs to market. Currently, Parexel conducts clinical trials in more than 100 countries and supports 1,700-plus clinical projects in 20 therapeutic areas.

Drug development today is more than a process; it's a journey. Parexel is committed to helping make this journey smarter and more efficient.

Guided by the principles of integration, innovation, and partnership, Parexel's global harmonization allows its teams across the world to serve clients effectively as one. Through innovative thinking and solutions, Parexel helps biopharmaceutical companies at every step of their drug development journey. And, a collaborative culture at the company, which includes being a true partner to clients, helps accelerate development cycles and reduce costs.

Parexel's learning and training programs encompass four primary learning domains, including: company culture and strategy; functional competencies; leadership development; and professional development. The company's standardized instructional design model ensures training programs address the complexities of global clinical trial requirements, with each program featuring a unique set of performance metrics to measure operational and training effectiveness across the learning disciplines.

In addition to training employees, the company is committed to developing the future, global biopharmaceutical workforce with courses specifically tailored to meet the growing talent needs of the clinical development job market. Since 2001, the Parexel Academy, located in the United States, Europe, and Asia, has designed and implemented a wide range of programs for learners outside of the company.

Intrapreneurialism is encouraged and regularly seen at the company. One such example is the team that developed Perceptive MyTrials, a platform that enables access to EDC, randomization and trial supply management (RTSM), clinical trial management, medical imaging, and ePRO programs to manage trial data more efficiently and effectively. Originally, the Parexel team developed the platform as an internal tool. After realizing that the technology's capabilities could also benefit clients, the company integrated the technology into its eClinical suite.

Drawing upon its marketplace longevity, Parexel continues to innovate by introducing new technologies to streamline the drug development process while offering the latest expertise on clinical needs across the globe. PV

Viscira
CREATING INTERACTIVE SOLUTIONS

New Media Communications

viscira

Viscira is creating disruption in its marketplace by challenging traditional approaches to creating digital solutions, new media communication solutions, and interactive software applications. A key focus for the company is technology R&D. The company has developed specific industry plugins for animation software firms that better support pharma and life-science needs.

Using its "5D" phased-delivery framework — discover, design, develop, deploy, debrief — the company creates innovative software applications and compelling digital content to drive and optimize brand engagement across multiple channels, including online, mobile, convention, and sales rep interactions.

Viscira's "digital-first" focused approach reinforces a key focus on technology R&D, where its teams continually research and investigate the latest cutting-edge technologies that can make an impact within healthcare and life sciences.

With regard to new technology introduction and adoption, Viscira has been recognized by numerous pharma organizations for its best practice standards pertaining to technology deployment.

Viscira's visual designers and interaction designers have been specifically trained in the design thinking methods as well as having participated in IDEO design thinking programs. There is constant cross-pollination of ideas and innovation at Viscira on client programs and internally.

Viscira is serious about innovation; about 10% of the company's gross revenue every year goes toward R&D investments that support innovation and new product development. Innovation also comes directly from its employees. The company sets up creative forums such as "First Fridays" collective brainstorm, where leaders have set up an open forum to review inspirational work from anywhere on the first Friday of every month. The company also has programs like the 5-Second Motion Challenge, where the company's 3D animation, visual effects (VFX), and UI / UX design teams are challenged to create short five-second video clips based on a chosen creative theme. All of these types of programs help to foster an environment of employee innovation. PV

Microsoft DRIVING INNOVATION

From the Cloud to Gaming Consoles

Microsoft Kinect Sensor is enabling touchless interactions in surgical settings. These interactions allow images to be viewed, controlled, and manipulated without physical contact.

Microsoft, the software giant, is using its big data computation abilities and expertise in the cloud, to develop innovative computing technologies and advance research in human health issues. From heath IT to experimental diagnostics, Microsoft's Health and Wellbeing collaboration projects apply advanced computing technologies, such as data analysis, imaging, sensor networks, and visualization to provide insight into disease and human healthcare.

The Microsoft Biology Initiative (MBI) is a Microsoft Research effort to bring new technology and tools to bioinformatics and biology research. This initiative is comprised of two primary components: .NET Bio (formerly Microsoft Biology Foundation [MBF]) and the Microsoft Biology Tools (MBT).

Microsoft Research Connections researchers are collaborating with Molplex, a small drug discovery company, and Newcastle University to help scientists around the world deliver new medicines more quickly and at lower cost. This partnership has helped Molplex develop Clouds Against Disease, an offering of high-quality drug discovery services based on a new molecular discovery platform that draws its power from Windows Azure.

Other projects include medical imaging at Microsoft Research and SenseCam. Microsoft Research is addressing the increased dependence on medical imaging for patient diagnosis and treatment. Microsoft Research is working with top research institutes to make available data and tools and advance automatic analysis of medical scans.

SenseCam is a wearable camera with a wide-angle lens that takes photos periodically without user intervention. This simple device turns out to have many valuable applications.

The company's innovative approaches to healthcare extend to its Kinect for Windows-based system, which enables surgeons to navigate through and manipulate X-rays and scans during operations with a wave of the hand. It's a prime example of the burgeoning field of natural user interface (NUI).

Other researchers are exploring ways to use Kinect for Windows to evaluate the damage caused by strokes and to create and monitor game-based rehabilitation exercises, many of which can be performed by stroke patients in their own homes.

Still other research is looking at how Kinect can assist in diagnosing disorders of the brain and nervous system, including Alzheimer's and multiple sclerosis. PV

Quintiles TRANSFORMING TRIAL EXECUTION

Taking an Integrated Approach

Quintiles, which was started 33 years ago in a trailer at the University of North Carolina at Chapel Hill by biostatistics professors Dr. Dennis Gillings, and Gary Koch, Ph.D., now conducts business in about 100 countries.

Quintiles' integrated approach brings together the right people, a structured design process, robust technology, and data for better, more confident decision-making throughout the design process. The company's world-class team includes knowledge experts in drug development and strategic partnering, therapeutic specialists and data analysts, as well as a global network of clinical trial delivery, regulatory, and commercial experts.

Quintiles, which provides biopharmaceutical development and commercial outsourcing services, helped develop or commercialize all of 2013's top-100 best-selling drugs on the market (2014 statistics pending).

The company's technology and design data for dynamic scenario modeling uses the Quintiles Infosario design and its data sources and libraries to provide agile decision-making, sophisticated data visualizations, and dynamic "what-if" scenario modeling.

The company's combination of services enables faster, more informed decisions, big picture insights, improved patient safety, increased study quality, and more efficient trial management, which can lead to as much as a 25% cost reduction over traditional trial execution approaches.

In 2015, the biopharmaceutical services company was named to Fortune magazine's World's Most Admired Companies list. Quintiles ranked third overall in Fortune's Healthcare: Pharmacy and Other Services category with the top ranking for the reputation attribute of global competitiveness and second within the segment for its people management.

During 2014, Quintiles also was recognized as the Best Contract Research Organization (CRO) in the UK SCRIP awards, named Asia CRO of the Year by Frost & Sullivan, voted Best CRO in Asia in the BioPharma Asia Industry Awards, and was named Best Contract Sales Organization (CSO) in the PharmaField awards in addition to being named to the Fortune 500 for the first time. PV

Cerner
CONNECTING PEOPLE AND SYSTEMS

Leading the Way Through EHR

Having won numerous awards for its own technologies, including being named to Forbes' most innovative and most admired companies, Cerner takes pride in the awards being accumulated by its clients, including honors for quality, information management, and innovative use of technology.

Since its inception, Cerner has innovated at the intersection of healthcare and information technology. The company's mission remains to contribute to the improvement of healthcare delivery and the health of communities.

The company is continuously building on its foundation of intelligent solutions for the healthcare industry connecting people and systems at more than 18,000 facilities worldwide, and its wide range of technologies and services support the clinical, financial, and operational needs of organizations of every size.

Using design-based thinking, Cerner offers strategies that empower organizations to know, manage, and engage their populations. Its applications are developed with physicians in mind so they can focus on people, not technology.

In March 2015, Cerner's Millennium was recognized as a Leader in the Gartner Magic Quadrant for Enterprise EHR Systems report.

With the February 2015 acquisition of Siemens Health Services, Cerner and the former Siemens business unit have a combined annual R&D investment of more than $650 million. The cumulative resources are expected to speed delivery of the company's next generation of health IT solutions, enabling clients to control costs and improve healthcare outcomes. PV

Neal Patterson, Cerner Chairman, CEO and Co-founder

Cerner remains focused on key development areas including population health, physician experience, open platforms, revenue cycle and mobility.

BioMarin
FOCUSED ON RARE DISEASE

Five Approved Products and a Strong Pipeline Devoted to First-in-Class Therapies

With five products on the market and a fully integrated multinational organization in place, BioMarin, which was founded in 1997 based on its proprietary enzyme technology, is providing innovative therapeutics to patients with serious unmet medical needs.

The company's approved products include: Vimizim (elosulfase alfa) for Morquio A, a rare inherited disease that affects major organ systems; Naglazyme (galsulfase), an enzyme replacement therapy for the treatment of mucopolysaccharidosis VI (MPS VI), an inherited life-threatening lysosomal storage disorder caused by a deficiency of the lysosomal enzyme N-acetylgalactosamine 4-sulfatase; Kuvan (developed in partnership with Merck Serono), the first and only FDA-approved medication for PKU to reduce blood Phe levels in patients with hyperphenylalaninemia (HPA) due to tetrahydrobiopterin (BH4-) responsive PKU; Aldurazyme (laronidase), developed through a 50/50 joint venture with Genzyme, is an enzyme replacement therapy for the treatment of mucopolysaccharidosis I (MPS I), an inherited, often life-threatening lysosomal disorder caused by a deficiency of the lysosomal enzyme, alpha-L-iduronidase; and Firdapse, currently approved in the EU, is the first and only approved drug for the symptomatic treatment of Lambert-Eaton Myasthenic Syndrome in adults, a rare autoimmune disease with the primary symptoms of muscle weakness.

BioMarin's pipeline reflects its dedication to developing first-in-class or best-in-class therapies for patients with rare genetic diseases. According to Jean-Jacques Bienaimé, CEO, with eight new molecular entities in development the company has the largest pipeline of any biotech company focusing on rare and ultra-rare disorders, and with more than 6,000 rare disorders in the world there's plenty of opportunity to discover new products.

In addition to developing products to meet the needs of specialty patient populations, the company provides individualized patient support services, connecting those in need with case managers who assist with access to treatment, insurance coverage, and reimbursement support.

BioMarin was recently named to Forbes' list of Most Innovative companies. PV

BioMarin CEO Jean-Jacques Bienaimé

Under Jean-Jacques Bienaimé's leadership, the market capitalization of BioMarin went from around $450 million in May 2005 to about $9 billion in April 2014.

COMPANIES TO WATCH

These companies are making waves and putting foward interesting concepts worthy of notice.

Companies to Watch

23andMe
23andme.com
Aarhus University
au.dk
ADM Diagnostics
admdx.com
Illumina
illumina.com
InnoCentive
innocentive.com
MC10
mc10inc.com
Perfint Healthcare
perfinthealthcare.com
Yumanity
yumanity.com

23andMe

Human Genetics Key to Discovering New Treatments

Genetic Testing Goes Beyond Consumers

23andMe wants patients to have access to their genetic make up if they want it. And it wants to provide access to that information to life-sciences companies for use in drug development. No problem there, as around 80% of 23andMe's 875,000 customers have agreed that the company can use their health data for medical research. Since 2007, more than 500,000 people have purchased the tool kit, spit in a tube, and shipped it off to wait for their results to appear on a website. These customers can learn what their DNA reveals about non-medical traits such as hair texture and ancestry, as well as whether they carry DNA variants associated with increased risks for diseases including type 2 diabetes and Alzheimer's.

In the past, the Google-sponsored company has collaborated with medical researchers and pharmaceutical companies, such as Pfizer and Genentech, by licensing access to genetic information contained in its database. In a bold move, it recently set up its own pharmaceutical arm to identify new drug targets for both common and rare diseases. The company hired Richard Scheller, a former Genentech executive, to become its chief scientist and lead the company's R&D efforts. Launched in 2006, the company hit a speed bump with the FDA in late 2013, when the agency called on the company to stop selling its DTC genetic tests. Just a little more than a year later, however, the FDA approved 23andMe's genetic test under a regulatory classification for novel devices for Bloom Syndrome. The submission was evaluated through the de novo regulatory pathway. This year, researchers working with 23andMe completed the first ever genome-wide association study of rosacea, a common and incurable skin disorder. The study is the first to identify genetic factors for this condition.

Updated February 19, 2015, 23andMe provides ancestry-related genetic reports and uninterpreted raw genetic data only.

Aarhus University Hospital focuses strategically on innovation as an important part of a joint effort to promote and develop activities within research, organisation, management and technology.

AARHUS UNIVERSITY

Finding an Antibody Needle In The Cancer Haystack

10 Artificial Antibodies That May Prevent Cancer Tumor Growth

A research team at Aarhus University has developed 10 new antibodies that can possibly be used in the battle against cancer. The antibodies work by inhibiting the body's blood vessel formation close to the tumor, which is thereby cut off from oxygen and nutrient supply.

The researchers isolated their antibodies from a library consisting of billions of different antibodies, and they subsequently analyzed the ability of the individual antibodies to inhibit blood vessel formation. This sounds like incredibly extensive laboratory work, and it would have been far from possible just a few years ago. However, they used a biological technology for this purpose that they developed and published in Nature Protocols three years ago. It helps them to identify and extract the antibodies with specific binding properties regarding the surface proteins in blood vessel cells.

In the coming years, researchers will work on gaining a more in-depth understanding of the 10 antibodies. Aarhus University researchers are among the world's leading specialists in developing artificial antibodies for cancer treatment and, in recent years, they have worked on compositions of genes for a collection of several billion new types of antibodies. The University stresses that the results are preliminary. Aarhus is Denmark's second oldest and largest university.

illumina®

Taking the Wait Out of Genetic Research

Streamlining Next-Generation Sequencing Experiments

Illumina is a developer, manufacturer, and marketer of life-science tools and integrated systems for large-scale analysis of genetic variation and function. These systems are enabling studies that were not even imaginable just a few years ago, and moving the world closer to the realization of personalized medicine. Illumina's most recent development is its NeoPrep digital microfluidics platform for automated preparation of sequencing libraries. Digital microfluidics uses electrical voltage to manipulate nanoliter volume droplets through standard library prep chemistry, to ultimately transform sheared DNA or total RNA into ready-to-sequence libraries. This revolutionary technology enables 16 libraries to be prepared in parallel, with only 30 minutes of initial hands-on time, freeing up a researcher's schedule for other projects or planning the next experiment. Most NGS library prep requires a whole day of planning around critical wash and incubation steps. Now, with the tap of a touchscreen, samples are concentrated into nanoliter volumes and merged with droplets containing the components for executing each sequential enzymatic reaction with exquisite precision.

Illumina has a broad portfolio of leading-edge sequencing and array-based solutions that address a range of genomic complexity and throughputs, enabling researchers to select the best solution for their scientific challenge.

INNOCENTIVE®

Discovery Through Open Innovation, Crowdsourcing

Finding Solutions Faster

By unleashing human creativity, passion, and diversity, and untethering the search for solutions from an individual, department, or company, amazing things happen. Problems are solved better, faster, and at a lower cost than ever before.

InnoCentive' methodology is called Challenge Driven Innovation, a framework that accelerates traditional outcomes by leveraging open innovation and crowdsourcing along with defined methodology, process, and tools to help organizations develop and implement actionable solutions to their key problems, opportunities, and challenges.

Unlocking the potential of millions of people to work productively on pressing problems is the power of Challenge Driven Innovation. The company's global network of millions of problem solvers, proven challenge methodology, and cloud-based innovation management platform combine to transform the economics of innovation through rapid solution delivery and the development of sustainable open innovation programs. Leading organizations such as AARP Foundation, Booz Allen Hamilton, Cleveland Clinic, Lilly, Nature Publishing Group, Procter & Gamble, Scientific American, Syngenta, Thomson Reuters, and several government agencies in the U.S. and Europe have partnered with InnoCentive to rapidly generate innovative new ideas and solve problems faster, more cost effectively, and with less risk than ever before.

Bringing Wearable Technology to Disease Management

Creating Solutions for Patients with Neurological Disorders

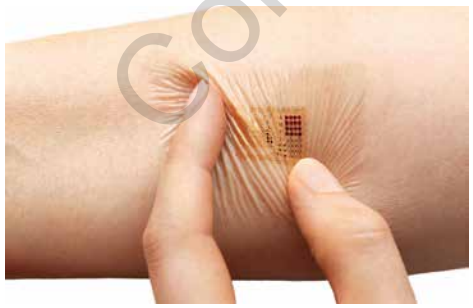
MC10 has created transparent stamp sized "tattoos" equipped with tiny electronics that enable continual patient monitoring.

MC10's Biostamp platform for patient-focused disease management solutions is a novel, conformal sensing platform that will combine with UCB's pharmaceutical products to help patients with neurological disorders.

MC10 develops stretchable, electronic sensing systems that bend, flex, and twist to match the properties of the human body. MC10's Biostamp platform offers a unique, patient-friendly solution for disease monitoring and management. This passive monitoring of patient health data will not only help patients but also doctors to provide more personalized care. Additionally, it could help to accelerate neuroscience clinical research and provide insight into the real-world impact of therapies.

MC10 reshapes electronics into body-integrated form factors that extend human capabilities by making high-performance electronics virtually invisible, conformal, and wearable. Their products address issues across the areas of consumer health, medical devices, industrial and defense, and digital health.

For example, MC10 develops a new class of catheters embedded with ultra-low profile, nanometer-thin sensors. It has also designed activity and physiological monitoring devices, such a sports gear and baby monitoring. It hopes to one day use its technology to prevent brain seizures.



Wearable health tech promises to save lives, so startups such as MC10 are working to create something patients will never forget to put on.

Changing the Course of Interventional Oncology

Cancer Surgery in 3D

Today, physicians plan interventional procedures by combining 2D images with their understanding of human anatomy. Physicians are then expected to manually advance one or more instruments to reach the target, without causing damage to vital structures, while accounting for organ and patient movement. It is, therefore, not surprising that these procedures are limited to the most skilled and experienced physicians.

However, radiologists around the world are now using Perfint's Robotic solutions for image guided interventional procedures such as biopsy, drug delivery, ablation, drainage, fine needle aspiration, and varied pain care procedures for both cancerous and non-cancerous pain.

Perfint's most recent product Maxio, is set to change the world of interventional oncology. Maxio will allow clinicians to visually plan, execute, and validate ablation procedures on a single system, and all in 3D.

Maxio has been designed to make complex, multi-probe ablations simpler, which will help to make these life-saving procedures available to more cancer sufferers than ever before.

Now, Maxio assists physicians to visualize and plan an entire procedure, such as tumor ablation, in 3D. Multiple VOI, multiple instruments, and placement sequencing can all be planned before advancing a single instrument.

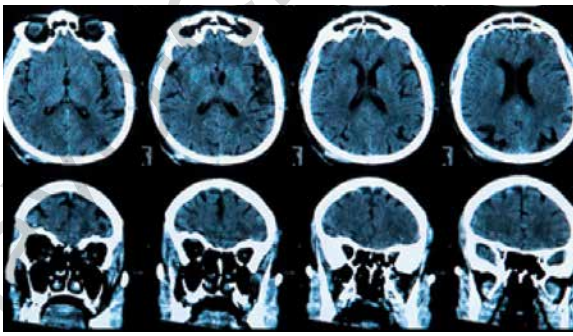
Once the surgical plan is confirmed, the Maxio stereotactic arm, combined with intra-operative registration, assists physicians to carefully advance one or more instruments accurately to reach the target.

Maxio's post-operative image registration helps physicians verify and extend the treatment if needed. Maxio's reporting tool then helps generate required reports.

Perfint Healthcare has won the Department of Biotechnology's Biotech Product and Process Development and Commercialisation award, noting that the company is a world leader in planning and targeting solutions for image-guided interventional procedures with emphasis on oncology and pain care.

Transforming Drug Discovery

Addressing Neurodegenerative Diseases



Biotech startup Yumanity Therapeutics was launched to develop new therapies for neurodegenerative diseases caused by protein misfolding.

According to a write up by Matthew Herper in Forbes, Yumanity Founder Tony Coles could have had any job he wanted in the drug industry. After selling his company Onyx Pharmaceuticals for $10.4 billion in October 2013, the industry anticipated he would invest in another biotech. Instead, Mr. Coles is taking a different road, and started up Yumanity Therapeutics to research how misfolded proteins in the brain cause Alzheimer's, Lou Gehrig's disease, and Parkinson's disease by using yeast.

Yumanity's new approach to neurodegenerative disease drug discovery and development concentrates on correcting the cellular pathologies driven by misfolded proteins, the altered biology or phenotypes. Less than a year old, the company's proprietary platforms have already identified one potential new target for treating Parkinson's disease, and Yumanity is actively advancing its new chemical lead series for this condition, as well as identifying additional compounds for Alzheimer's disease and ALS.

Yumanity's unique approach overcomes the fundamental limitations of the most commonly used strategies in drug discovery today, which have repeatedly failed to deliver effective therapies for these diseases.

Yumanity's integrated platforms enable the company to move back and forth between yeast cells and human patient neurons in a highly iterative and parallel fashion, continually building on lessons learned with multiple protein pathologies to accelerate the discovery of novel therapies.

ADMdx Fighting Alzheimer's Disease

Algorithm Helps Quickly Identify Appropriate Trial Participants

Dawn Matthews, CEO of ADM Diagnostics, a global centralized CNS imaging core lab and diagnostic services provider, was invited to the White House to attend the BRAIN (Brain Research Through Advancing Innovative Technologies) initiative event to celebrate the progress being made by the federal government, universities and research foundations, the private sector, and others to advance the goals of the organization.

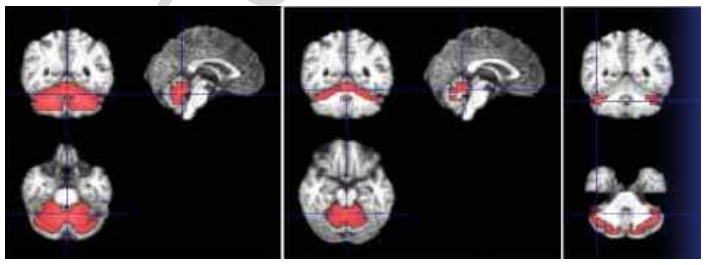
ADM Diagnostics (ADMdx) is using propietary advances in brain image analysis technology to enable the early, accurate diagnosis of Alzheimer's and other forms of dementia.

Alzheimer's disease drug development has experienced dismal results. From 2002 to 2012, 245 drugs were tested in clinical trials with 244 failing. Part of the reason, according to ADMdx, is failure to identify early, correctly diagnosis, and scale the correct patient population. Two large-scale Phase III trials reported 35% of enrolled subjects did not even have AD.

The methods for choosing patients for clinical trials being used currently are biased cognitive assessment testing, and are not effective enough to quickly advance a trial, according to the company.ADMdx developed a proprietary pattern-recognition based algorithm that is applied to glucose metabolism (FDG PET) scans of subjects from the ADNI data set. The algorithm quantifies the degree to which a patient is expressing a "signature" pattern of neurodegeneration associated with the progression of Alzheimer's disease, as an AD Progression Score in cognitively normal subjects, the score was predictive of cognitive worsening and the time to progression.

ADMdx also provides neuroimaging studies and data analysis emphasizing central nervous system disorders. It has developed optimized approaches to the collection, quality control, and analysis of image data to maximize the reliability and interpretability of results.

The breakthrough technology for pharmaceutical companies should improve the overall safety and efficacy in CNS, particularly Alzheimer's disease, drug development. This innovation will allow drug developers to diagnosis and enroll the correct patient population, find patients earlier in the disease stage that are treatable, improve safety by not misdiagnosing patients, and lower costs by powering the studies correctly, all toward developing a drug to modify or cure Alzheimer's disease. By even delaying the onset of AD by three or more years, studies report billions in saving in healthcare costs. But the true measure of success will be that fewer individuals will not suffer this incredibly awful mind-robbing disease. PV



By applying a proprietary algorithm, ADMdx's software can assist drug companies acquire better data quality for CNS diseases.