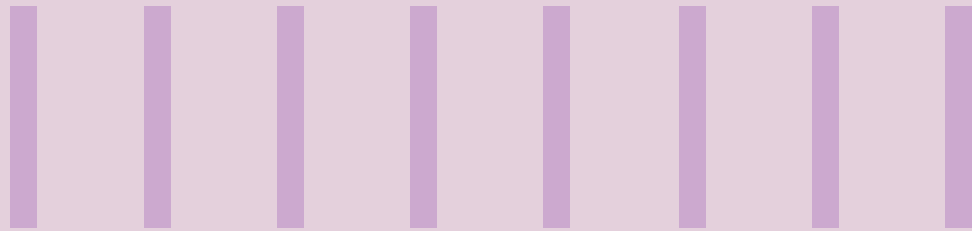




THE HIGHER OUTCOMES LOWER COSTS

5 SMART PILLS FOR THE LIFE SCIENCES INDUSTRY



From what's now to what's next in life sciences

Populations are aging. Chronic illnesses are increasing. New disease strains are emerging at an alarming rate. Add to this mix the soaring number of patients in a greater spread of geographies. Top it with global regulatory mandates. Then factor in variable dosage needs. Think about the shelf life of pharmaceutical drugs and medications. And lo, we are looking at skyrocketing global healthcare costs. At the same time, there is pressure to develop innovative drugs to save more lives.

This urgency, a dire need to do something, raises many questions for the life sciences industry. So what lies ahead? Let's find out with expert insights derived from panel discussions on "Coffee Break with Game Changers Radio", an Internet talk radio show presented by SAP and hosted by Bonnie D. Graham. These shows bring together industry thought leaders to discuss and debate topics of global importance.

MEET THE EXPERTS



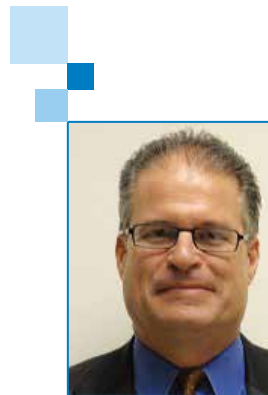
Manish Tandon

Executive Vice President, Life Sciences & Services, Infosys



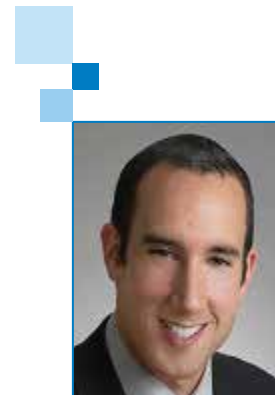
Alan S. Louie, Ph.D.

Research Director, IDC Health Insights



Joe Miles

Global Vice President, Life Sciences Industry, SAP



Eric Newmark

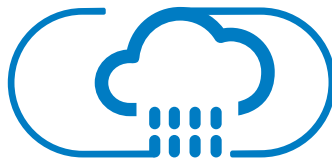
Program Director, IDC Health Insights

THE 5 SMART PILLS

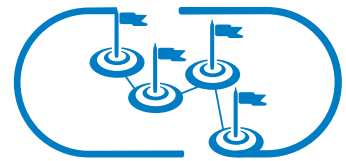
Life sciences enterprises looking to sustain a competitive edge can look to these 5 smart pills as areas of opportunity.



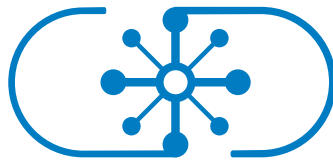
**OPTIMIZING
CLINICAL TRIALS**



**HARNESSING
BIG DATA**



**CURING
EMERGING MARKETS**



**LEVERAGING
NEW TECHNOLOGIES**



**TACKLING
COUNTERFEITS**



OPTIMIZING CLINICAL TRIALS

THE TAKEAWAYS

- **Sharing information across the ecosystem:** Although the clinical trial process has matured over the years, achieving a holistic view of data across the entire clinical trial ecosystem is still a challenge. This can be solved by putting in place cloud-based clinical trial management systems.
- **Detecting failure faster:** Pharma companies must test fast and fail fast to ensure the focus is diverted to the right compounds. This is key to reducing time-to-market of clinical trials.
- **Speeding up the pace of clinical trials:** Companies must adopt virtual clinical trials where the disease and medication is simulated in a computerized environment and data is analyzed using sophisticated algorithms.

THE PREDICTIONS

- The traditional drug trial will continue with both big and small molecules. As we move forward, ideally, there will be no areas with medically unmet needs.
- Science will evolve strongly in favor of large molecule biotech-based medication and personalized medicines, but it will not be a full reality before 2020.

THE VIEWPOINT



"...organizations are now in a continuous clinical trial mode, leveraging technologies and devices for patient-provided outcomes. So, even though the product is released, clinical trials continue to operate, capturing more data to get continuous insights. ..."

- Joe Miles



HARNESSING BIG DATA

THE TAKEAWAYS

- **Solving the data puzzle during trials:** Predictive analytics technologies that leverage big data can help drug supply become effective and efficient by ensuring samples are delivered in the right place at the right time, in addition to helping make informed decisions faster. Adaptive and risk-based monitoring are some other tools and processes that can help companies get the most out of clinical data.
- **Collecting and analyzing patient data in real time:** The world of connected devices and networks makes it possible to not just automatically collect and update data from patient bedsides to patient homes, but also trigger automatic alerts for healthcare providers and patients.

- **Driving down the cost of big data:** Adopting open-source technologies and commodity infrastructure clusters can enable pharma companies to accelerate implementation of big data and realize benefits faster while saving millions of dollars.

THE PREDICTIONS

- Big data will enable true personalization of care – individualizing patient information sharing and communication down to ‘the level of one’
- Remote health monitoring will soon be the norm for aging populations in the Western world.

THE VIEWPOINT



“...information has become accessible in real-time. Little (analytical) screens on top of the data can regularly look at it and show if there is anything that is out of the ordinary – whether it is a recognizable concern...”

- Alan S. Louie



CURING EMERGING MARKETS



THE TAKEAWAYS

- **Mastering demography:** The genomic diversity of emerging markets will require pharma companies to recruit more patients faster for clinical trials. With rapid digital adoption in these markets, mobile devices will be the way to go for onboarding patients and tracking their treatment data.
- **Winning with collaboration:** Overcoming market-specific challenges will require strong alliances among pharma companies, medical devices, payers, and regulators.
- **Getting the economics right:** If the mantra is to grow faster in emerging markets without spiraling costs, companies will need to arrive at the right mix of owned assets and outsourced partnerships. Owned or

outsourced, manufacturing or supply chain, having affordable and rapidly implementable information technology solutions that connect plants and partners will drive the pace of success.

THE PREDICTIONS

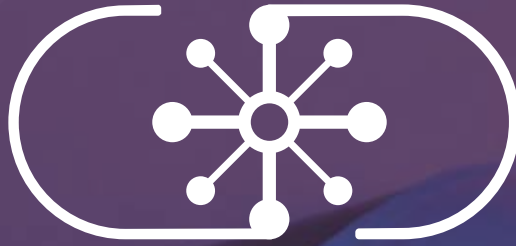
- With rapid growth in emerging markets, pharma companies will increase their focus on diseases like Ebola that have been around since the 1970s in these markets, rather than waiting for it to increase in incidence in developed markets and then finding a cure.

THE VIEWPOINT



“...emerging markets are a big opportunity for pharma companies. But from the R&D productivity standpoint, these markets create new challenges in genomic complexity. So, in research and clinic development process, trials need to be more inclusive taking into context the wider population that the companies will have to deal with...”

- Manish Tandon



LEVERAGING NEW TECHNOLOGIES



THE TAKEAWAYS

- **Transforming processes:** Innovations from non-healthcare players – from wearable devices to iPads to Microsoft Kinects – new technologies are helping companies work smarter by infusing new efficiencies into processes across the value chain – from research to patient care.
- **Adding data science to life science:** While the industry has been slow in adopting technologies such as cloud and social, they are embracing leading-edge computational tools – especially in the backend – to manage and process data faster.
- **Anticipating and solving the challenges of connectedness:** Devices and the free flow of information are posing new threats beyond the obvious challenges of information

security. For example, patients in the clinical trial process may talk to each other to determine whether they are being treated with a real drug or a placebo based on factors like the taste of the pill.

THE PREDICTIONS

- Innovation through devices will increase – both for devices as a part of the therapy and devices that are being used to capture the broader data.
- The cost of technologies and affordability of using them will come down drastically, making insights available from patients, health care professionals, genomic data, and industry regulators to create usable data oceans.

THE VIEWPOINT



“...It’s fascinating to think how non-healthcare players are bringing technologies to the marketplace that could dramatically impact the efficacy of products, the experience for patients, and the overall productivity of the outcome in years to come...”

- Joe Miles



TACKLING COUNTERFEITS

THE TAKEAWAYS

- **Cracking down on fraud, with consumers:** Companies must set up digital platforms or apps that enable consumers to identify counterfeits and reward them to do so.
- **Implementing item level serialization:** This will provide the ability to track a product from manufacturing to distribution to consumption, providing a much-needed safety net to tackle counterfeits.
- **Reducing revenue leakage:** Besides improving supply chain security and tackling counterfeits, item level serialization helps optimize distribution, improve demand forecasting and production planning, and faster product recalls.

THE PREDICTIONS

- While the industry is headed towards item-level serialization, success in implementing it will be made possible through big data platforms that can track billions of serial numbers in real-time.
- Although counterfeits will not vanish, they will slow down and technology will continue to be the key enabler in tackling it.

THE VIEWPOINT



"...the industry has low security relative to other industries – lack of regulation to the lack of item-level serialization. Unlike other industries, trade goes through several intermediaries, so there is opportunity for fakes and counterfeits to seep in..."

- Eric Newmark

MASTERING THE FORCES OF CHANGE

Pharmaceutical companies need to move faster, introduce safe and cost-effective drugs that respond effectively to chronic and urgent diseases – from cancer to Ebola. Today, pharmaceutical and medical device companies are working together to surmount these hurdles in the healthcare market as they help all of us prepare for a healthy global future. And they are doing this by connecting the dots among data in its various forms – from big data to scientific data, clinical data, genomic data, and patient therapy data.

Information technology solutions will hold the keys to mastering the forces of change – whether it's optimizing clinical trials, staying on top of regulation, accelerating innovation, serving emerging market needs, or tackling counterfeits.



Pharma and Technology Higher Outcomes,
Lower Costs – Part One

Pharma and Technology Higher Outcomes,
Lower Costs – Part Two

Counterfeit Medical Products: Stop the
Madness

EXPERT PROFILES



Manish Tandon

Executive Vice President, Life Sciences & Services, Infosys

In his role as an Executive Vice President and Head of the Life Sciences and Services vertical at Infosys, Manish is responsible for overseeing services and solutions for global clients. He manages critical relationships with client executives, industry analysts, and deal consultants; and anchors the training and development of key personnel. Additionally, he is on the Board of Infosys Public Services and Infosys Lodestone.



Alan S. Louie, Ph.D.

Research Director, IDC Health Insights

Alan is Research Director for IDC Health Insights' Clinical Development, Strategy and Technology research service with coverage of innovation and best practices in pharmaceutical R&D and a further emphasis on technology and innovation in clinical development, business analytics, translational research, and personalized medicine. He has authored more than 160 reports on innovation in the life sciences and blogs in the IDC Community.



Joe Miles

Global Vice President, Life Sciences Industry, SAP

Joe utilizes his diverse business and consulting background with Life Sciences companies to lead SAP's global life science practice. Joe has helped life science companies enable key business processes to achieve their operational objectives, regulatory compliance mandates, and strategic financial goals.



Eric Newmark

Program Director, IDC Health Insights

As a Program Director for IDC Health Insights, Eric directs the Business Systems Strategies program. In this position, he provides research-based advisory and consulting services, as well as market analysis on key topics within the commercial life science industry. His research expertise includes sales and marketing, channel management, and supply chain related technologies and emerging market trends.

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