

## Connected healthcare is here to stay

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**We are witnessing a paradigm shift in diagnostic healthcare as it is moving towards connected devices**



Consumer behaviour in the pharma industry has witnessed a sea change with a significant acceleration in e-consultations through live video or phone calls between doctors and patients, e-purchases of medicines via e-prescriptions, and home collection of blood samples. The combined power of the Internet, data science, connected devices and AI is bound to accelerate the pace of digital transformation in pharma organisations to improve quality and productivity. Skilled manpower in artificial intelligence (AI), machine learning (ML), cloud computing, robotic process automation (RPA), and other technological areas are going to be the most sought after. Let's examine the top trends that are already gaining momentum.

### Faster time-to-market for drug-discovery

AI algorithms, Big Data and early-stage experiments using new technologies are substantially lowering time and costs in bringing new drug formulations to market. The entire research and development cycle spanning data management, clinical trials and testing are now so technology-oriented, that pharma companies are increasingly onboarding 'health-tech' partners in their journey to drug discovery, hitherto a pure science domain.

### Digitisation & automation

The manufacturing shop floor in pharma was amongst the first to embrace digitisation and automation. It was not just about making processes paperless but also to ensure that quality processes were robust and scalable, with minimal scope for human error. It ensured cGMP compliance in the manufacturing process. Additionally, integration of robotic and AI have been reducing manufacturing downtime and substantially reducing product wastage.

Automation has eradicated human intervention associated with increased risk of contamination as well as variability to

enhance quality control. Also, with serum-dependent processes with lot-to-lot variability, Robotic Process Automation mitigates any lack of proper cell characterisation strategies.

Developers and researchers are integrating their knowledge to develop and have common access to phase appropriate process development (PD) and bioassay services (BAS), remove the manufacturing bottlenecks, reduce their cost of goods (COGS), and prepare for commercial readiness in advance.

## Biologics

Instead of developing medicines (chemicals which are small molecules and generics) which start at the point when a disease disrupts the normal healthy life of an individual, the industry is progressively moving towards biologics, studying how diseases are contracted through genetic susceptibility and/or prevented through genetic resistance. The development has spawned a new and rapidly growing interest in pharmacogenetics, epigenetics and genomes.

## Connected healthcare systems

We are witnessing a paradigm shift in diagnostic healthcare as it is moving towards connected devices, with AI and internet providing the first level diagnostics followed by a prognosis and final review by an expert doctor before the actual prescription. This is empowering both patients (customers) and doctors to be connected virtually and have given rise to a whole system of healthcare integrators and aggregators bringing experts and patients on the self-monitoring virtual healthcare platform.

Governments across the globe are realising how such connected healthcare systems are not only more flexible but also increase efficiency. AI-enabled diagnosis and prognosis for review by consulting expert doctors have witnessed a significant rise in traction even in hospitals and clinics with high number of patients.

## Collaboration globally in compliance & regulatory conditions

Regulatory bodies like the US FDA and EMA are going to strengthen the WHO in its ways of working. Automation software for common standards and compliances are going to be universally implemented since it impacts humanity at large.

With the convenience of healthcare solutions through technology, the pharma industry is set to make a paradigm shift. Pharma companies involved in R&D, manufacturing, testing, and even sales are now presented with the challenge to ensure that their workforce is skilled to keep up with this change. It becomes imperative for everyone in the pharma chain to understand the latest developments and be proficient in the ways of working with customers at various touchpoints.

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