

 accelerating innovation in healthcare

WHITEPAPER

Key Trends for Healthcare Technology Companies in 2016



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Overview

From interesting developments in digital care delivery to advances in sensors, 2016 promises to be an exciting year for healthcare technology.

CitiusTech's close association with some of the world's leading healthcare technology companies gives it a unique vantage point to help companies identify common themes which we believe are going to be important for healthcare technology in 2016.

To form a validated perspective, we looked at industry research reports by leading analyst firms. Secondly, we spoke to senior executives at our client organizations to understand their perspective. Thirdly we spoke to senior architects and technology professionals within CitiusTech to get their thoughts, given their experience in working with a range of customers.

The trends highlighted in this paper reflect the collective thinking of healthcare technology experts and industry analysts in the world of healthcare technology.

Key technology trends that will drive healthcare outcomes in 2016 -

- Cloud Efficiency
- Real-Time Analytics with Big Data
- Predictive Analytics
- Digital Transformation (DX)
- Containerization
- Integration with IOT



Trend #1: Cloud Efficiency

With most organizations having embraced, or in the process of developing applications on cloud infrastructure, there will be an increased focus on driving efficiency from the existing investments in cloud. It is no longer sufficient to scale vertically in minutes – the cost of the new hardware, maintainability, licensing, on-going support – all need to be optimized.

As the maturity of cloud platforms and infrastructure increases, the notion will move a notch, from lift and shift, to utilizing PaaS components, as that's where the savings lie.

However, the move is not without its risks. Stability and on-going support remain key concern. On public clouds, there are offerings for which the cloud provider may not be willing to sign a business associate agreement.



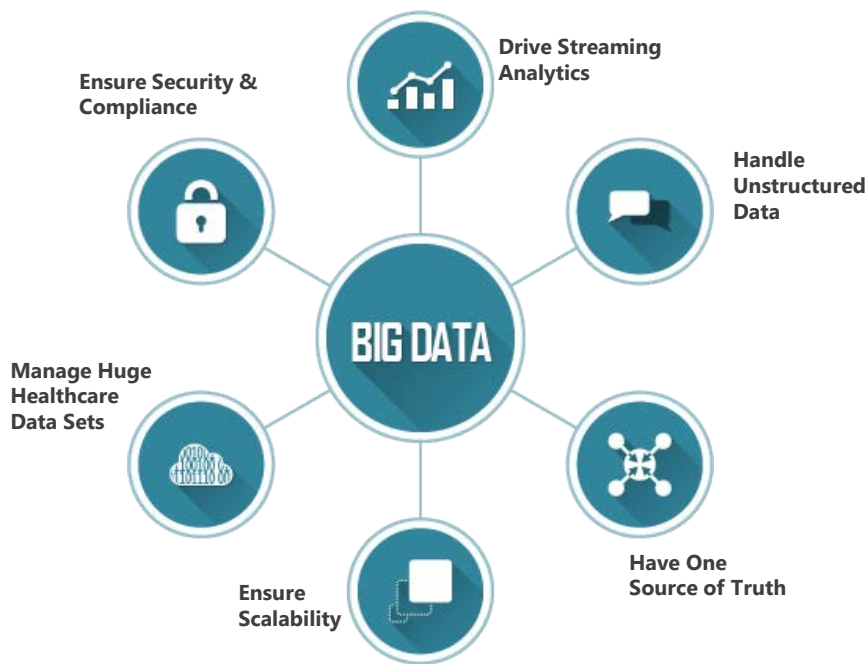


Trend #2: Real-Time Analytics with Big Data

The pace of innovation in the analytics space is exhilarating. On the aggregation front, real-time data feeds and streams will become the norm. At the consumer end, self-service BI will become the de facto approach. The need to have near real-time insights into enterprise and user data sets and the ability to act upon it is the key driver.

With availability of scalable, low cost infrastructure via public cloud vendors, more and more enterprises are finding it easier to upload data into cloud, scale their infrastructure and start running analytics on the cloud and then point their favorite BI tools to analyze this data.

Technology providers need to think in terms of minimizing the time of analysis of the data locked within their stores.





Trend #3: Predictive Analytics

Healthcare organizations have started to realize the enormous potential predictive analytics has in identifying high-risk patients, reducing readmissions and improving overall patient outcomes. Organizations are taking conscious efforts in enhancing their IT infrastructure by aligning clinical, financial and quality data (such as EHR, HIS or PMS) and integrating predictive analytics models into their systems.

However, to leverage actionable, data driven insights and foresights from predictive analytics in true sense, integrating different types of healthcare data needs to be complemented with alignment of analytics needs. Having a strong product management in place with in-depth knowledge of internal IT infrastructure, organizational structure, staff and patient population is critical in understanding organization's problem areas, analytics requirements and setting analytics priorities accordingly.

A small fraction of providers today (about 15 percent) actually use predictive modeling but more than 90 percent of these organizations use the outputs to make better decisions on patient care and management. Some of the critical areas where providers are currently focusing their predictive analytics initiatives include readmissions, patient deterioration, sepsis and general patient health.*

While these are some of the popular use cases, **effectively collaborating** with key stakeholders and potential end-users and understanding the immediate analytics needs of your organization can help to identify novel and relevant use cases for predictive analytics.

**Survey by HIMSS and Jvion*



Trend #4: Digital Transformation (DX)

As the initial euphoria over mobile enablement is dying down and along with it the oft-repeated catch phrases such as responsive mobile, hybrid versus native etc. we now see a much saner, realistic assessment that mobile is the new norm, and simply plastering a new presentation layer on top of existing applications is not enough to be competitive.

The approach towards mobility needs to be thought of in a renewed manner, with an integrated look at data, services, security and application use cases that make sense. Many times, it may also mean redoing key features in an integrated manner that is mobile aware. It may also mean including capabilities such as location awareness, micro interactions, and innovative approaches to data presentation such as activity streams (now popular on social sites) and data sharing (a key feature of most popular apps).

On the consumer side, wallets and in-app purchases are gaining in general adoption and enterprises are keen to have their own apps behind a custom enterprise app store.

Trend #5: Containerization

Among the technology trends that made an impact in 2015, Docker and Containerization are right up at the top. Docker's sweet spot lies in its ability to enable efficient migration to a PaaS model. Over the past year and a half, Docker has gotten a tremendous fan following and we expect the adoption to increase significantly.

Digital healthcare will revolutionize the industry, both by increasing access to diagnostic, treatment, and preventative care, and by dramatically reducing costs. Digital healthcare can help the industry save **\$305 billion** in the near future.

- Goldman Sachs Global Investment Research

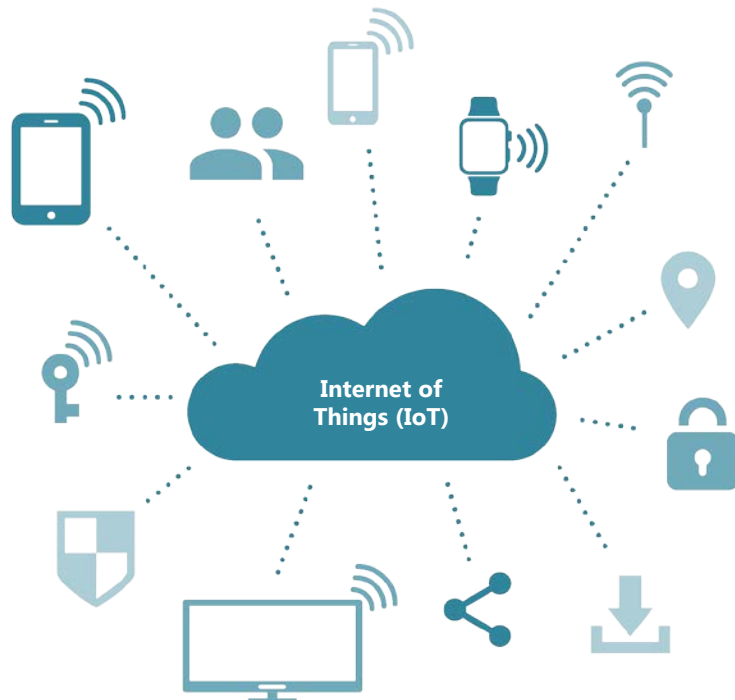


Trend #6: Integration with IOT

2015 was the year of the wearable.

Innovation leaders in this space such as Apple, Fitbit, Microsoft, etc. have pushed the envelope of possibility in mass scale wearables. As technology companies look at extending their reach to include data from end users and patients, sensor enabled mobile phones, wearables, nearables and the plethora of sensors that form the backbone of IOT adoption in healthcare need to be included as well.

Healthcare technology players will need to start thinking of how they would assimilate data from such an extended set of input devices, while addressing challenges around manageability of data, patient privacy and data normalization. Additionally, they need to think about extensible models so that newer devices could integrate seamlessly in the future.



Other Trends

In addition to these, we expect investments to increase in goal directed usability, scalable performance and application security as has been the norm for the past couple of years. And we expect more and more vendors to leverage open source components, being much more open to sharing of their source code in public and even doing their development in an open source model to gather early feedback from their community.

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About CitiusTech

CitiusTech is a specialist provider of healthcare technology services and solutions to medical technology companies, providers, payers and life sciences organizations. CitiusTech's services and solutions include healthcare software development, healthcare interoperability, regulatory compliance, BI/analytics, consumer engagement, care coordination and population health management.

CitiusTech helps customers accelerate innovation in healthcare through a number of solutions and accelerators for clinical quality reporting, big data, cloud computing, mobile health and predictive analytics. With cutting-edge technology expertise, world-class service quality and a global resource base, CitiusTech consistently delivers best-in-class solutions and an unmatched cost advantage to healthcare clients.

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