

# Marketing Technology for Pharma

## An overview of some of today's most talked about tech

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*As we all know, technology moves quickly. The pace at which new technology emerges is accelerating and will continue to do so. Although innovation is inevitable, what gains broad acceptance amongst users is fickle and unpredictable. A study by Flurry Analytics showed that 50% of mobile apps lose half their users in the first 90 days. Another analysis by Pinch Media showed that the average shelf life of an iPhone app is less than 30 days. On average, we only focus on about eight apps at a time. Just like design and fashion, technologies come and go as trends along with a lot of hype. Sometimes that hype is warranted, but oftentimes media attention can fuel unrealistic expectations of technology. How many times have you shared an amazing app or innovation with a friend or coworker just to be met with the response, "It's about time somebody did that?" **When a technology hits the peak of the hype cycle, innovation struggles to simply meet what consumers and businesses feel they should already have.** So how do you separate inflated claims from meaningful technological advancement and start using them in meaningful ways? Hopefully these brief overviews will help bring some clarity to some of today's hottest tech topics in pharma marketing.*

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### Internet of Things (IoT)

**What is it?** Internet of Things (IoT) is a term that encompasses many technologies, but what it boils down to is adding internet connectivity to objects that traditionally have not been internet connected. The convergence of powerful batteries, Bluetooth LE (a.k.a. Bluetooth Smart), and small inexpensive sensors has enabled the viability of IoT. Because IoT is extremely hyped right now, there's going to be a whole lot of traditional manufacturers looking for ways to "IoT" their products, and plenty of start-ups in the space capitalizing on a new market. Much of what we see will leave us scratching our heads wondering, "Is that necessary?" but there will be some legitimate and useful products that emerge from the hype.

**Why should you care?** Because IoT is one of the most hyped areas of tech right now, many marketers will be talking about it. It's likely they will be looking for ways to

bring the idea of IoT into their products and marketing efforts.

Of course outside of pharma marketing caring about IoT, we'll have plenty of new gadgets to make our lives a little easier. More importantly, we will all benefit from some of the ancillary technologies that will be spawned to support it. The most exciting one will be faster, easier to use, more reliable and less power-hungry Wi-Fi.

**What could you be doing?** Take a look at the way your business operates and identify opportunities that devices could be utilized to make life a bit easier for your employees or your customers. For example, Amazon is creating small wireless devices called "Dash buttons" that make ordering consumables around the house simpler. This concept could be applied to prescription refills for patients or sales representatives or sample requests from healthcare professionals.

## Big Data

**What is it?** Big Data is a term that encompasses technologies but it is also a broader concept. There is much debate about what the term means exactly. From the IT perspective, it means volume—database and system architectures that can handle massive amounts of data. I'm not talking about storing hundreds of millions of records in a database. I'm talking about reading and writing hundreds of millions of records (and audio files, and video files and documents) a minute. In order to support this massive influx of data, there has been a renaissance in storage technology. The rapidly evolving products and architectures born from this renaissance are still finding their footing in enterprises.

From the philosophical or conceptual side, "Big Data" means pulling together data from disparate sources, both structured and unstructured, for the purpose of gaining intelligence and helping to inform decisions regardless of volume. It's this definition that is most meaningful to marketing.

Big Data is declining in media attention and exaggerated capability, which is a good thing. That means expectations are headed towards a realistic level. With this settling, Big Data will be allowed to find true usefulness.

**Why should you care?** Data-driven decision making and execution should be at the core of any digital marketing efforts. "Big" or not, you should always be striving to find insight in the data you have and seeking ways to fill gaps in knowledge by collecting more meaningful data. In the coming years, data will continue to become democratized, first from programmers, then from data scientists and finally from analysts. This doesn't mean those roles won't be needed, it means they won't be the only ones that care. The pharma marketer of the near future will begin to desire more hands-on engagement with analytics and a better understanding of how collected data can lead to better customer engagement.

**What could you be doing?** For the most part, pharma marketing isn't currently faced with a massive data volume challenge. And to put things in perspective, with the rapid adoption of IoT and sensor data, what industry analysts thought was "big" two years ago will look like an excel spreadsheet containing Silentó's discography. If you don't know who that is, he's the one-hit-wonder who created "Watch Me (Whip/Nae Nae)". What we *are*

challenged by is finding insight in the data we have and being able to take action on that insight. What does it mean that primary care physicians (PCPs) open email 8.7% more than specialists? Why does that happen? What should we do with this knowledge? Many marketers have advanced their ability to collect data, but are still struggling to find insight.

If you aren't yet collecting data, get started. The centralization of data that's clean and actionable is no small task, but is invaluable in the long-term. The future of your competitive advantage lies in how well you manage and use data in your organization.

*If you are collecting data, here are a few ideas on what you could be doing with data:*

- » Centralize the reporting on multi-channel marketing data
- » Utilize analysts with domain and tactical expertise to bring insight to your reporting
- » Work on opening your data warehouses to more of your organization
  - Having more resources utilizing data creates broader opportunity for innovative applications of your data
- » Seek opportunities to integrate salesforce and marketing data to help break down any silos established between non-personal promotion and the salesforce.

## Customer Relationship Marketing

**What is it?** Customer Relationship Management (CRM) is another term that encompasses both technology and philosophy. The mantra of CRM is to meet your customers where they are. To provide them with what they want, when they want it and where they want it. That's hard enough to do for your significant other, right? And that's one person you know better than most. So how are pharma marketers supposed to do it with millions of healthcare professionals (HCPs) and patients? That's where technology comes into play. Having a centralized system that knows exactly what a customer has done, what they've seen and what had impact is the first step towards true CRM. The next



step is to mesh those behavioral and psychographic data with your marketing goals and fill in the gaps with content using CRM technologies. This is straightforward enough when your customer interactions all happen in the digital space, but with HCPs especially, that will never be the case. There is a complex ecosystem that includes both human interactions and technology with patient interactions, advertising (digital and traditional), sales representatives, account executives, trade shows,

but with continual “opening” of many software and data solutions, it’s becoming easier.

As a marketer, you should be continually striving to find ways to know *something* about your customers or pushing to know *more*, and also *do more* with what you already know. A good way to start is through formulating hypotheses. For example, “I think HCPs open email more at lunchtime.” Next, ask yourself, “Do I have the necessary data to test this?” If not, figure out what data you are missing and start collecting it. It’s not uncommon for marketers to either have no usable data and are too overwhelmed by trying to figure out what to collect or they have so much data that they ask broad questions that are very difficult to answer. The best advice is always to start small and build on what you learn.

**“We’re at an inflection point, or transition, from lifestyle health stuff to medical metrics. It’s the medical metrics where accuracy becomes fundamental.”** —Eric Topol

medical conferences, payers, EMR systems, accountable care organizations, scientific studies, the media, the government and more that all play a part in the decision to prescribe. Unfortunately, it’s not uncommon for the pharma industry to think that buying a CRM system will be all that’s needed to deliver on the mantra of CRM. We all know it’s more than just a system. It’s the combination of technology, compelling content, enjoyable experiences, and reliable data to fuel it all. CRM is a long-term commitment that requires a well-equipped team to keeping it running.

**Why should you care?** Regardless of how you label it, execution on the philosophy of CRM is what your audience expects from you. Call it customer-centric marketing, multi-channel marketing, relationship marketing, a rose by any other name would still smell as sweet. Wait... Well, you get the point.

**What could you be doing?** Pulling together data that can inform marketing decisions was touched on in the “Big Data” section of this paper. One point worth mentioning is that the idea of “one database to rule them all” is a myth. There are many physical databases holding data that are valuable to marketing efforts but ancillary to their primary function. The idea of a single conceptual database is valid and achievable, but trying to get all customer data in a single *physical* location is unrealistic and a fool’s errand. Data integrations tends to be a common stumbling point for many marketing teams,

## Email

**What is it?** You already know what it is, so no need to explain. Although email is not a hot, new technology, it is still a very relevant way to reach customers.

**Why should you care?** Email has been a top performing marketing channel for many years. In fact, in one study, results indicated that 68% of companies rank email marketing as “excellent” or “good” based on the return on investment. In a landscape where the decision to prescribe or want a particular product over another becomes increasingly complex for patients and HCPs alike, having a solid grasp on this important channel is extremely important. Email has the ability to engage and connect, but also frustrate. The world simultaneously hates email yet embraces it as a primary channel of communication. As your flooded inbox will attest to, we love email! When it comes down to it, for as much pain email can cause in its execution, it is still one of the most valuable and effective channels to reach customers. Much of the pain that comes along with email marketing stems is based on myths around the technology itself.

*A few of those myths include:*

- » **It’s just like a web page, it should work the same.** Sadly, email lacks much of the standardization that the web enjoys, so there’s still a lot of hacking involved to get email to look right across the 30+ major email clients.
- » **It’s extremely reliable; if I send an email it will**

***“Humanity needs to be vigilant if it wants to exact the benefits of technological possibilities while minimizing the harms. There are inflection points, windows of opportunity, where we can shape the trajectory of a new technology. A little adjustment early on can take us toward a very different destination. But these windows open and close very quickly.”*** —Wendell Wallach

**definitely get delivered.** Although email is fairly solid, there are a variety of technical issues that can leave email communication “lost in the mail.”

- » **Text-based email isn't relevant anymore.** The fact that smartwatches currently only display text versions of email should dispel this myth.
- » **Mistakes never happen.** They will. But the best thing you can do is to have a plan and to minimize the risk of a similar error recurring. Litmus, a leader in email development and testing tools, has a great decision tree and whitepaper on how to recover when mistakes get made.
- » **A reported “open” means my email got looked at.**
- » **If an open wasn't reported, the email wasn't opened.** This is not necessarily true. Technically, for an email open to be tracked, **images must be turned on.** No images mean no open tracking.

There are plenty more misunderstood nuances surrounding email and if you want to learn more, I recommend reading Litmus, or Campaign Monitor's blogs.

**What could you be doing?** Start moving away from sending one-off email “blasts” to an entire audience and embrace more customized communication “journeys”. With the right automation systems in place, these journeys can include emails triggered on behavior and contain dynamic content based on any number of things you know about your customer. One example use might be monitoring sales representative activity and if visits drop off, augment message delivery with an automated

email journey. You can also pause that journey when personal activity for a customer returns.

This may be stating the obvious at this point, but mobile is the primary destination for email consumption and increasingly, the primary computing platform. With this in mind, it's important that the experiences you create cater to a smaller screen.

*A few email-related things to keep your eye on in 2016:*

- » Text to speech for email will continue to evolve and will bring even more relevance to the plain text and smartwatch version of an email.
- » Gmail still won't support media queries (a key technical component that enables responsive design).
- » Outlook will introduce a new rendering engine. Hooray!! Well, not so fast; many are saying it's the worst rendering email client Microsoft has made yet.

## Machine Learning/Artificial Intelligence

**What is it?** The terms machine learning (ML), artificial intelligence (AI), and predictive analytics are super-hot topics these days. Often, they are used interchangeably. While they are all sub-disciplines of computer science, AI is much broader in scope than the others. While AI strives to create systems that behave like humans or better, ML and predictive analytics use the immense power of computers, sensors and statistical theory to identify patterns in data and ultimately make accurate predictions. I would argue that AI will never be achieved, because the act of achieving AI, will force us to redefine “intelligence”. Thirty years ago, many would say that an autonomous vehicle would require sophisticated AI, but now that it's here, we don't call it AI. We call that ability machine learning.

In a way, the real power in ML is that it *doesn't* think like a human. Because of this, ML becomes an invaluable aid to human decision-making. If you want to go a *little* deeper into understanding ML, I recommend R2D3's visual introduction to machine learning. Although it only touches on a single method of ML, decision trees, it is a great resource for those who have no knowledge of ML. If you actually want to do ML, I highly recommend Stanford University's Coursera course on ML as a starting point.

**Why should you care?** Being in technology, I often get asked, “What’s the next big thing?” For many years my answer was, half-jokingly, “It’s still the internet.” Over the past few years, my tune has changed. My answer now is, “AI.” Although I adore great dystopian sci-fi movies like *Blade Runner* and more recently, *Ex Machina*, I’m not all doom and gloom when it comes to AI. AI will make our lives easier in a multitude of ways and the only thing to fear is the extent to which humans are willing

tion of smart marketing: using data to reach customers more effectively. Using machine learning requires a combination of programming, statistics and industry expertise. That last bit is often overlooked, but it’s absolutely crucial to creating accurate models.

**What could you be doing?** With the right data, there’s a lot of great ways you could be applying ML to your marketing. You could use ML to predict a customer’s content preferences in real-time based on past experience and behavioral data. This could then be used to serve content via digital channels that is hyper-targeted and more meaningful at precisely the moment it’s displayed. The really exciting application of these models is to make them available to any of your partners via web services so all of their marketing efforts are better informed.

*Although you may not be ready to let machine-learning algorithms make decisions, you should be experimenting with how ML can improve your marketing outcomes.*



*BMW's augmented reality dashboard concept.*

to put our trust machines. Undoubtedly, machines will perform very specific tasks such as driving a car in a more skilled and efficient manner than humans ever could, and much like the car displaced the horse from the road, it didn’t cause the extinction of the horse. We are still a very long way from the sentient machines depicted in film and television.

For the marketing industry, it’s all about ML. Machine learning had its beginning in the late 1950s and saw a resurgence in the 1990s when computer science converged with statistics. So why is ML so hot now, when it’s been around for so long? I attribute its resurgence to the combination of “Big Data”, tremendous advancements in the processing capabilities in commodity computer hardware, and the introduction of more accessible ML toolsets such as Microsoft’s AzureML, BigML.com, Google’s Tensorflow, Amazon’s Machine Learning, along with numerous others .

You *should* care about ML because it is the natural evolu-

## Virtual/Augmented Reality

**What is it?** Virtual reality (VR) is sensory immersion in a completely virtual environment. There is a tremendous amount of development happening on hardware peripherals associated with VR. Some of the bigger players are Oculus and HTC.

Augmented reality (AR) is your real-world environment augmented with virtual elements. Heads-up-displays (HUD) like the well-known, now defunct, Google Glass is an example of AR. The term “mixed reality” is emerging as a term describing AR in which the virtual elements interact with your real-world environment. Some of the best examples of mixed reality work that I’ve seen lately are coming from Microsoft’s HoloLens team and the secretive Magic Leap.

**Why should you care?** The consumer market is going to explode in both devices to create and applications of VR/AR experiences. Bring on the Metaverse! What was dabbled with in the 90s will become very viable over the course of the next few years. Not only that, this tech is also novel and cool, and marketers love both of those things. In fact, there are already numerous examples of VR being used for its novelty at conference booths around the industry.



One thing to keep in mind when it comes to VR is that it does require a pretty high performance computer to create a good experience. Think \$2000+ gaming rigs. This constraint may lead to some consumer frustration this year and might keep VR relegated to the gaming community in the short term.

While both VR and AR will find a comfortable home in entertainment and gaming, they both have some very useful applications outside those areas. Training and simulations will benefit greatly from both these technologies and there is a broad application potential for AR in medical, industrial and creative settings. Honestly, there are boundless potential applications for this technology as it matures into the mainstream.

One area that should be on your radar is 360-degree video. Although it's not truly VR (but that's not stopping people from calling it VR), 360-degree video will be everywhere by the end of 2016 and is already supported in both Facebook (the Oculus acquisition is starting to make more sense) and YouTube's mobile and desktop video players. 360-degree video uses specialized cameras to capture an entire space that

Creating high-quality 360-degree video changes the approach to video production entirely. Because the viewer is in control of their field of view, you can't have large crews, lighting and sound like you would have in a traditional production.

*A whole new creative approach will need to be adopted to conform to the fact that the "4th wall" is gone.*

**What could you be doing?** Combining your traditional video and CGI productions with software development will help make your content more immersive for audiences with these emerging viewing peripherals. Virtual reality MOAs, disease-state simulations, training, and 360-degree KOL or patient videos are just a few areas that could benefit from the application of VR/AR.

## Wearable Technology

**What is it?** A wearable is anything you wear on your body that has embedded electronics and is able to collect and transmit data. Activity trackers like the Fitbit Blaze, the Apple Watch or the HealthPatch MD are examples of wearable technology. Wearables have been on the rise over the past five years and that trend won't be dying down anytime soon. The convergence of highly miniaturized sensors and Bluetooth Low Energy (BLE) (rebranded as Bluetooth Smart) has created a tremendous opportunity for people to start wearing technology in less conspicuous ways than ever before. For the purposes of this article, I'm going to just focus on the healthcare aspects of wearables.

**Why should you care?** Wearables have been of interest in healthcare for many years as an avenue to treatment adherence, health monitoring and overall improved quality of care. So why don't doctors care about your Fitbit data? For starters, they just aren't accurate. There are so many factors like body hair, walking gait, perspiration, altitude and even tattoos that affect the accuracy of wearables. This inaccuracy combined with HCPs not having a good way to use the data has been a roadblock to gaining HCPs' trust. The added fact that the FDA is calling many of these devices "low risk" and not regulating them isn't helping improve their adoption. Researchers are currently working on ways to remove some of the external environmental variables by creating implantables, but those won't be hitting the street anytime soon.

So, why should you care? Much like the data collected to



*The Lumeo implanted biosensor.*

can then be "experienced" by a viewer. It's quite cool, especially when viewed in a VR device or on a mobile device that can change your view based on the position of your head/phone. Get ready for a flood of consumer camera companies to release "VR" video capture devices this year.

measure customer behavior, health data are a valuable input to a much bigger picture. Does it matter that much if your device says your resting heart rate is 82 instead of 74? Not really. What does matter is when your heart rate increases by two times from a baseline. The *consistency* of the data is far more important than its accuracy in many applications. These devices can help establish baselines that were previously unmeasured. From there, the variance from those baselines is what can be used to determine compliance or even the risk of adverse health events.

As “recreational” devices evolve into clinical grade, HCPs will need to integrate this nontraditional data with more traditional health records. Ingestible sensors like the Proteus pill will provide a constant stream of compliance and physiological data and are already in trials. Devices like this will further push the need for ancillary products that can bring these data together in meaningful and consumable ways.

**What could you be doing?** You may not be building wearable devices, but there are still many opportunities in the space where you could be looking to make those devices more useful for your business. One example would be building tools that integrate with the data the devices produce in order to help HCPs better understand their patients or aid patients with adherence and deeper education.

## Summary

There is a rebirth in innovation happening right now, the likes of which I haven't seen since the early days of the modern web. I'm excited to see how technology is being applied to marketing in this digital resurgence. Great innovation is born from experimentation with its application and the synthesis of existing technology and ideas to address your particular challenges. In fact, some variation of all these technologies is available to both you and your competitors. It is in the efficient and effective process of harnessing these technologies that will bring you true competitive advantage. Hopefully these technologies and concepts have sparked some ideas for you and your challenges. So grab a cohort or two and try something new. ■

## Just the Highlights

### Internet of Things

- » Hot topic; a lot of hype
- » Will lead to better, faster, more efficient wireless networking technologies
- » Will create a massive influx of new sensor data

### Big Data

- » “Big Data” for marketing means collecting data from disparate sources and, through analysis, gleaming actionable insight
- » Media hype has died down, which means expectations are more in line with capability

### Customer Relationship Marketing

- » Start by understanding something meaningful about your customer
- » This is the core of customer-centricity; understand your customer so you can be more impactful in your marketing efforts.
- » Systems are opening up and creating easier ways to share data between platforms

### Email

- » As strong as ever, but still misunderstood
- » The rise of smart watches and text-to-speech systems like Amazon Echo, or in-vehicle systems brings relevance back to text versions of emails

### Machine Learning/Artificial Intelligence

- » AI is the core area for innovation right now and some flavor of AI will find its way into every modern software system in the next ten years
- » ML is the natural evolution of what smart marketers have been doing for the past decade: using data to make well-informed decisions
- » Autonomous machines and algorithms may disrupt industries, but they aren't going to murder us in our sleep anytime soon

### Virtual/Augmented Reality

- » Lots of opportunity for novel experiences
- » Training and simulation offers the most opportunities for the application of VR/AR

### Wearables

- » Consumer devices aren't accurate, but if they are consistent, that doesn't really matter
- » HCPs will need ways to understand how wearables' nontraditional data fits with the data they are used to working with
- » May stay confined to niche applications until necessary hardware drops in price



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Michael is responsible for closerlook's technology strategy and vision. He facilitates the use of technology to meet both internal and client needs through the practical application of both hardware and software solutions. He works with the software development, marketing operations, and IT teams to deliver technical innovation that is simple, secure, scalable and accessible. Since joining closerlook in 1998, Michael has architected software platforms and led the development of numerous award-winning applications both large and small for clients. Michael holds a B.S. in Computer Science from Northern Illinois University, where he specialized in Applied Theory and Operating Systems.

### **Want to continue this discussion? Get in touch!**



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