

· A megatrend study ·

How **Digital Health** will impact the pharma industry

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The Pharmaceutical Division in Valtech has undertaken an evidence-based research study to map the pharmaceutical landscape of digital mega trends. The research study provides essential insights on how pharma companies should utilize digital engagement to break down stakeholder barriers, impact stakeholder behavior and demonstrate more cost-effective outcomes. The research study is based on information from 100+ trusted sources and has resulted in the identification of 14 megatrends.

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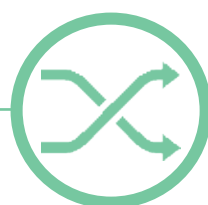


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How **Digital Health** will impact the **pharma industry**

A graphic consisting of a horizontal line on the left, a vertical line extending downwards from its end, and a small circle at the bottom of the vertical line, followed by a horizontal line segment.

valtech_pharma



The digital opportunity

This study aims to identify digital opportunities that can enable the pharmaceutical industry to leverage its deep disease expertise and marketing capabilities to break down stakeholder barriers, impact stakeholder behavior and demonstrate more cost-effective outcomes.

Megatrends

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Megatrends

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Megatrends

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Megatrends #1-5

Executive



#1

Execs recognize the digital health revolution but lack the confidence to act

Patients, HCPs and payers are engaging with digital health channels much more rapidly than the pharmaceutical industry^{55, 58}. These key constituencies expect digital to be an integral part of any future health offering, serving as a primary source for information and a hub for relevant conversation.

Audience expectations represent a market opportunity for pharma firms to leverage their deep disease expertise and marketing capabilities, and become reliable, trusted partners in increasingly influential digital channels^{1, 38}.

According to a recent global CEO survey^{1, 38}, 89% identified technology advances such as the digital economy, social media, mobile devices and big data as key trends. They believe digital has the capacity to

extend existing value propositions, or invent entirely new value propositions^{55, 58}.

So are pharma executives proactively adopting digital strategies as a “triple-aim” to improve the patient experience, deliver better clinical outcomes and drive down total cost of care? The short answer is no. Due to external threats and internal weaknesses, most executives lack the confidence to translate their high expectations into tangible action plans¹.

Pharma CEOs must develop an urgent response strategy to engage key stakeholder groups in the digital realm. These strategies should include stakeholder advisory boards to provide insight, partnerships with trusted digital services providers, and a revamp of internal structures and current business models¹.

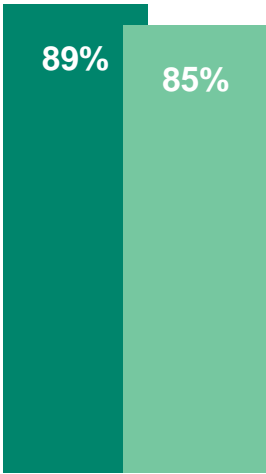
Big pharma is in it for the super-long run, having high expectations across the board

Source: 1, 38, 82

#1.1

“We have to make sure our shareholders understand this is a long-term business and quarter-by-quarter is kind of irrelevant. What’s important is where we are over the next decade. At our board meeting in North Carolina, we made decisions on things that will only succeed - if they evolve - 15 or 20 years from today. Everything we do is dominated by the super long-run view.”

Andrew Vitty
CEO GlaxoSmithKline



89% of CEOs identified technological advances such as the digital economy, social media, mobile devices and big data as key trends transforming their business.

85% says that digital media has forever changed the way the healthcare industry needs to communicate and engage with its constituents.

That digital will redefine pharma’s future value proposition

Source: 55, 58

#1.2



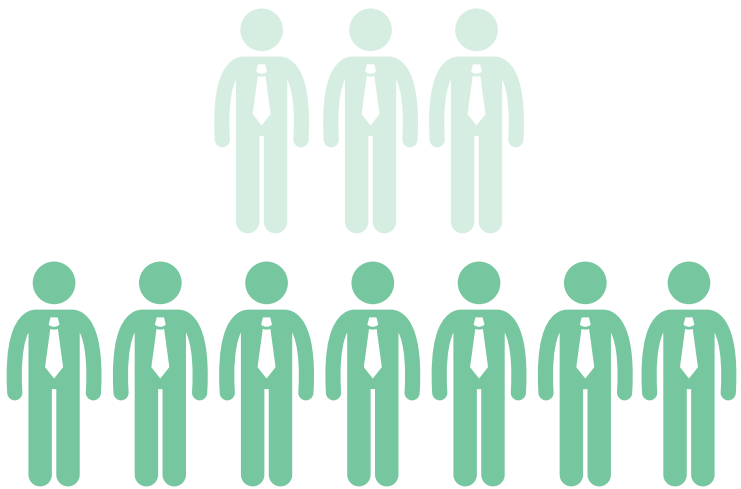
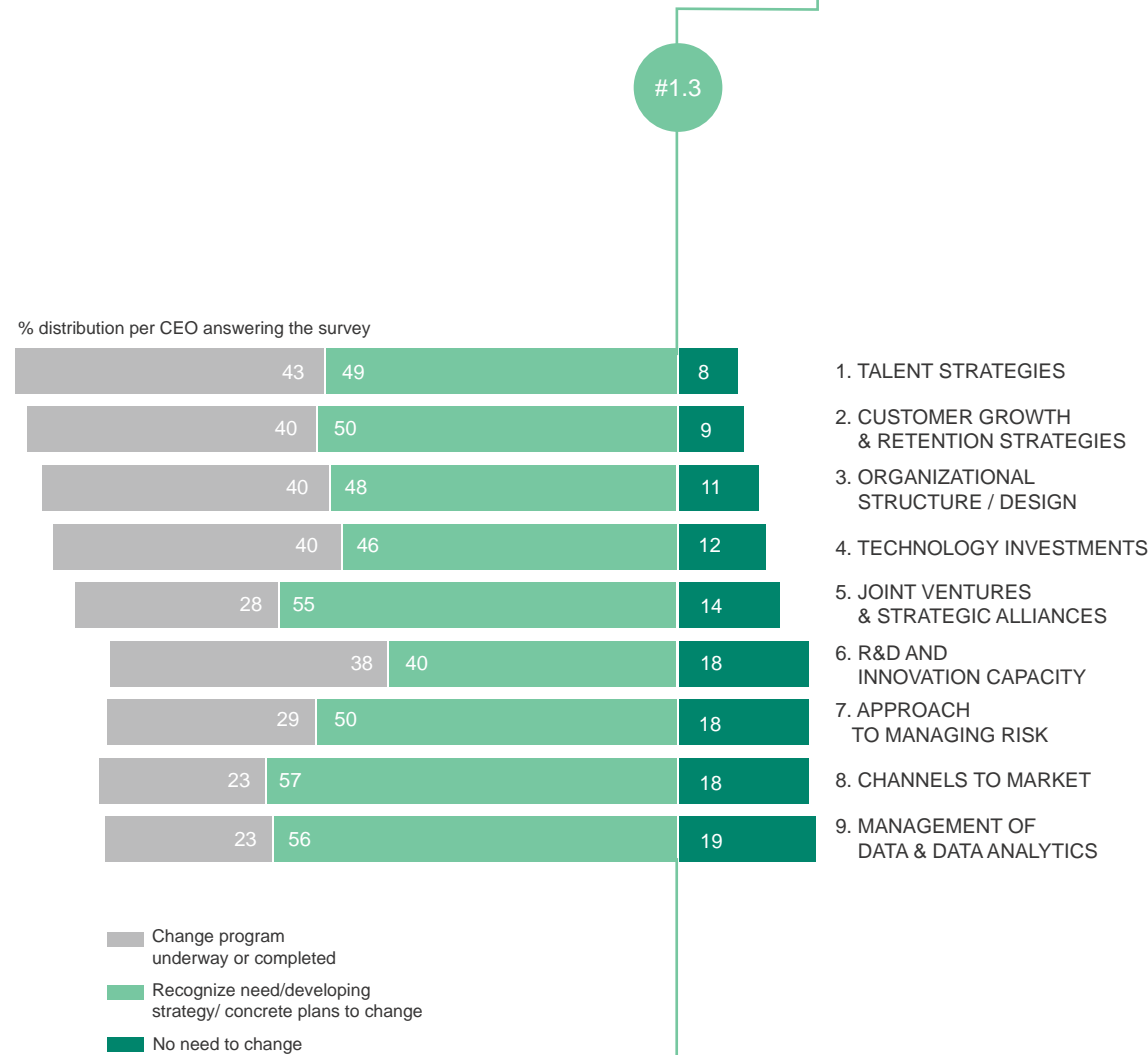
77% believe digital health will generate new business by 2020 (1). 94% believe it will either extend the existing value proposition (37%) or even invent a new value proposition for the Pharmaceutical Industry (57%) (5).

Consequently, all participants believe digital health will have an important (27%) or even crucial impact (73%) for the competitive advantage of their pharmaceutical companies (3).

By 2015 the majority of companies will use digital health to extend their value proposition (4) and by 2020 more than 90% of executives and senior managers expect to leverage digital health in a way that helps them to invent a new value proposition (57%) or to extend their current value proposition (37%) (5).

And current risk responses all potentially embrace digital

Source: 1



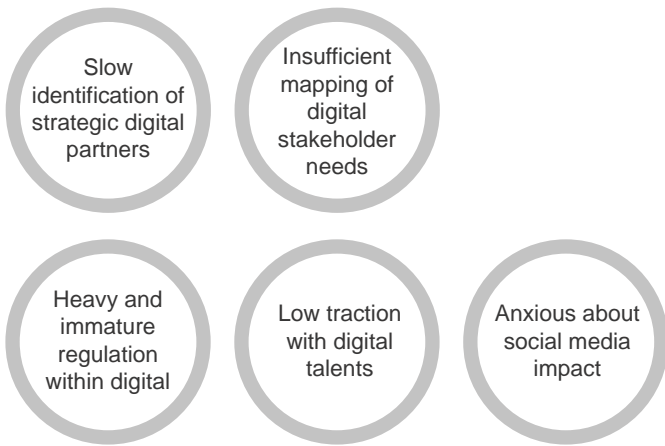
70% agree that pharma is behind in use of digital*

* With respect to the use of digital overall, how would you describe the Pharmaceutical and Device Industry compared with other industries?

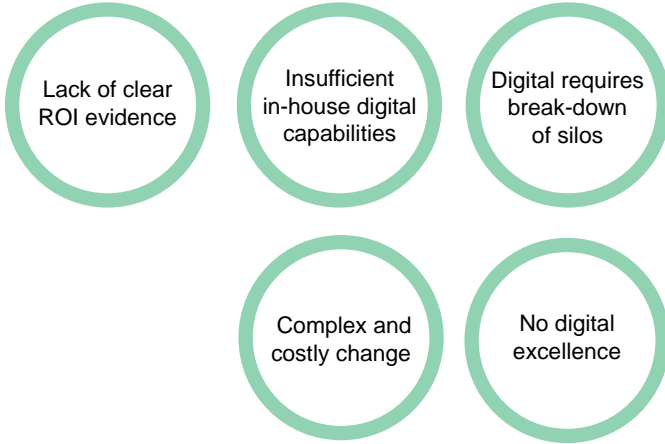
But pharma is behind in digital overall

Source: 40

#1.4



External threats and internal weaknesses result in slow pace and low confidence in CEOs digital decision making



And external threats and internal weaknesses lead to slow pace and low confidence in CEOs digital decision making

Source: 1, 11, 73

#1.5

As a consequence CEOs seek digital partnerships

Source: 83

#1.6

“The marriage of digital technologies with therapeutics is a phenomenon that is only going to grow... We will seek partnerships to help us understand the digital side of the business.”

Christopher Viehbacher, CEO Sanofi



Transforming to a “digital business”: An outcome-based paradigm shift

#2

The “feet-on-the-street” pharma business model is dead or dying.^{5, 73} Digital health will impact every individual and every organization involved in the healthcare system.¹⁸ The competitive advantages of today – development resources, sales and marketing scale, global high prices and revenues aided by restricted access – will be transformed by 2020 into a marketplace driven by distribution strength (particularly to emerging markets), pricing based on ability to pay, and more products with lower revenues and lower costs.⁶⁶

The value proposition and related revenue stream will shift from drug development/drug volume to an emphasis on health outcomes. Business objectives, therefore, will be shaped by community engagement across multiple digital channels, with key stakeholders – patients, HCPs and payers – at the head of the line.¹⁴

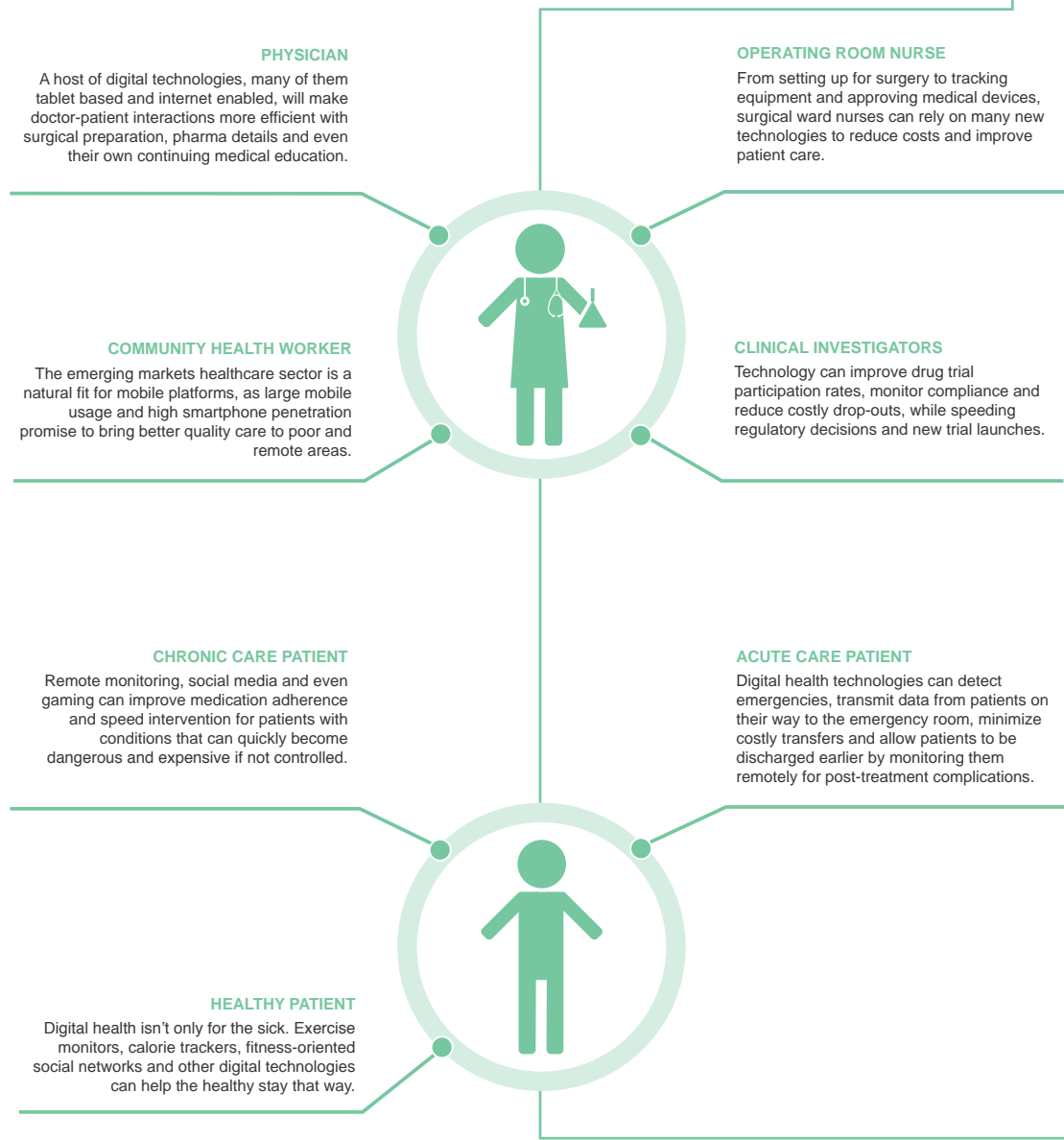
The emphasis on outcomes will invert the value proposition, from top-down control to an individualized value prop where revenues are derived from efficacy.^{14, 41, 71} Patients, payers, providers and governments will be at the center of this new model, putting a premium on comprehensive digital engagement that focuses on the entire patient pathway, from initial information-gathering behavior, to diagnosis and living with the disease or condition.^{5, 73}

Building active digital communities and leveraging digital tools and resources that drive improved outcomes will require the industry to rebuild its reputation among patients who lack trust that pharma firms are always acting with their best interests in mind.⁷⁷

The future prospect of digital health

Source: 18

#2.1



Digital health won't just transform the back office. It will change the daily lives of people throughout the healthcare system—from doctors, nurses and clinical investigators to patients, including both the seriously ill and the very healthy.

BASE OF COMPETITIVE ADVANTAGE TODAY:

- Development resources, sales and marketing scale
- Global high prices, restricting access
- Multiple competitors in major therapeutic areas, scale permitting success
- Multi-billion dollar drug revenues covering high fixed costs
- End to end operational capabilities for 'self-sufficiency' strategy
- Acquisitions of technologies and products to augment product pipeline
- Focus on mature Western Markets

BASE OF COMPETITIVE ADVANTAGE IN 2020:

- Value of products and services, distribution strength
- Pricing based on ability to pay driving volume uplift
- Fewer competitors in a broader range of diseases
- More products with lower revenues and lower costs
- Significant outsourcing of operations such as manufacturing and support functions
- Greater collaboration with academia, biotech and peers
- Focus on Emerging Markets

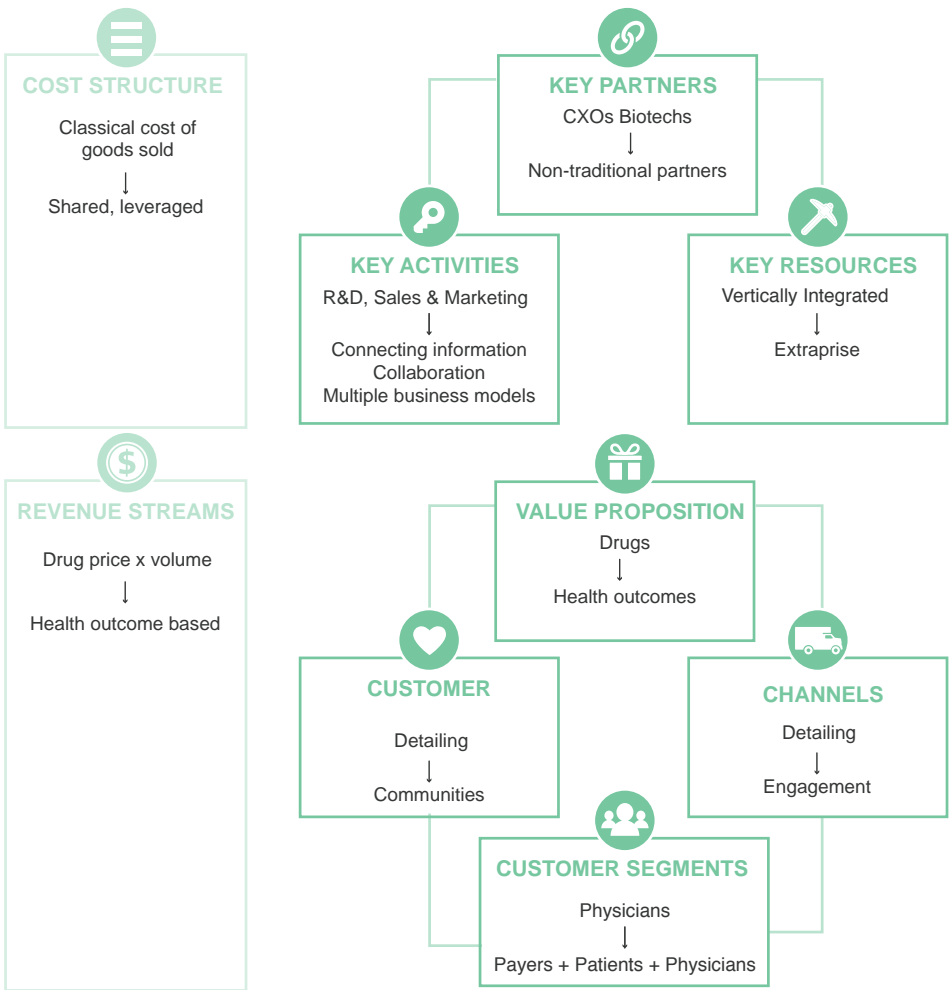
Combined with a new base of competitive advantage

Source: 66

#2.2

Will impact all dimensions of the pharma business model

Source: 14

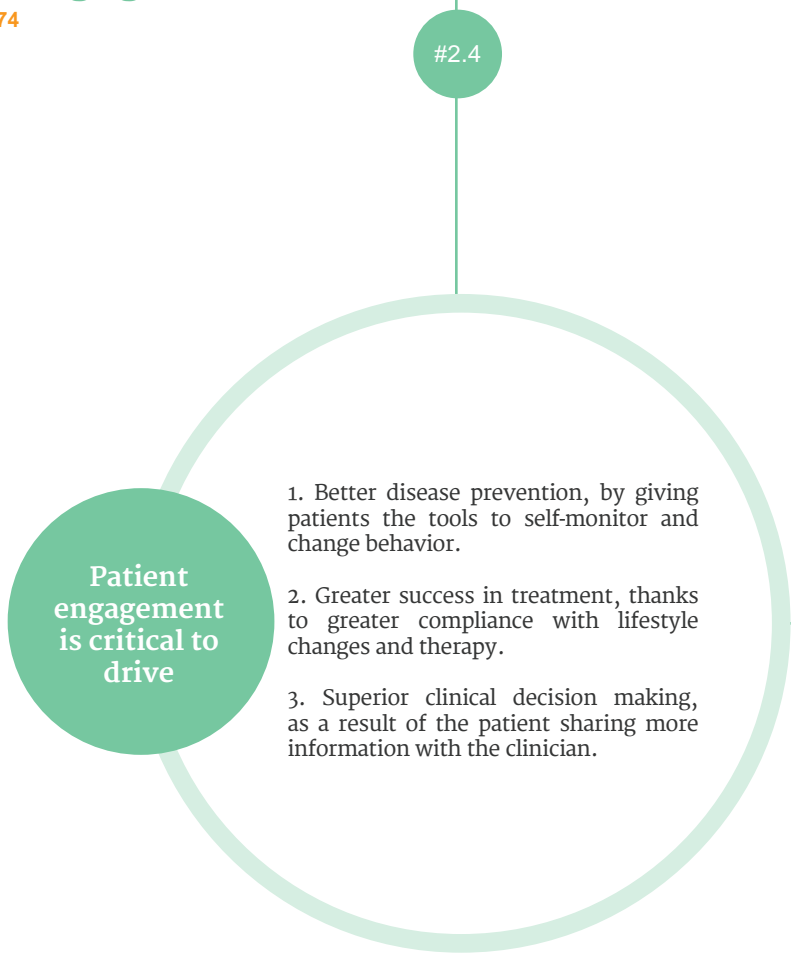


Key partners: The network of suppliers and partners that makes the business model work.
Key activities: The critical initiatives a company should undertake to make its business model work.
Key resources: The essential resources a company must have to make its business model work.
Value proposition: The bundle of products and services that create value for a specific customer segment.
Customer relationships: The types of relationships a company establishes with specific customer segments.

Channels: The way a company communicates with and reaches its customer segments to deliver a value proposition.
Customer segments: The different groups of people or organizations an enterprise aims to reach and serve.
Cost structure: All costs, such as marketing and promotion, distribution and royalty payments, incurred to operate a business model.
Revenue streams: Represents the cash a company generates from each customer segment.

Patient engagement

Source: 7, 8, 74



Forbes headline: "Patient Engagement Is The Blockbuster Drug Of The Century"

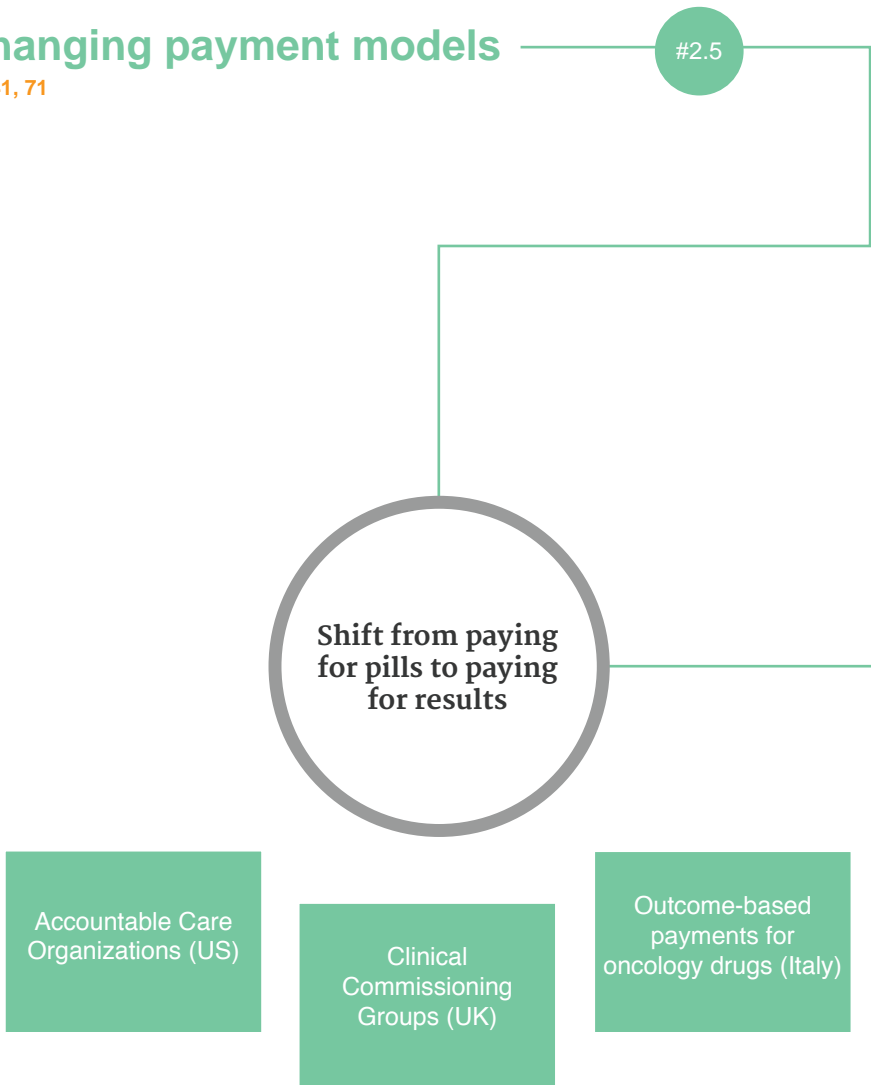
Many of the digital health approaches today are point solutions, targeted at monitoring one specific measure such as a patient’s blood pressure, whereas patient engagement relies on helping to meet the patient’s broader needs as a person. These point

solutions are necessarily incomplete. Where does the pharmaceutical industry come in? Pharma can use its expertise to enable a more holistic digital solution that would have greater success in engaging patients.

And changing payment models

Source: 14, 41, 71

#2.5



Represent the most fundamental shift

Source: 84

#2.6

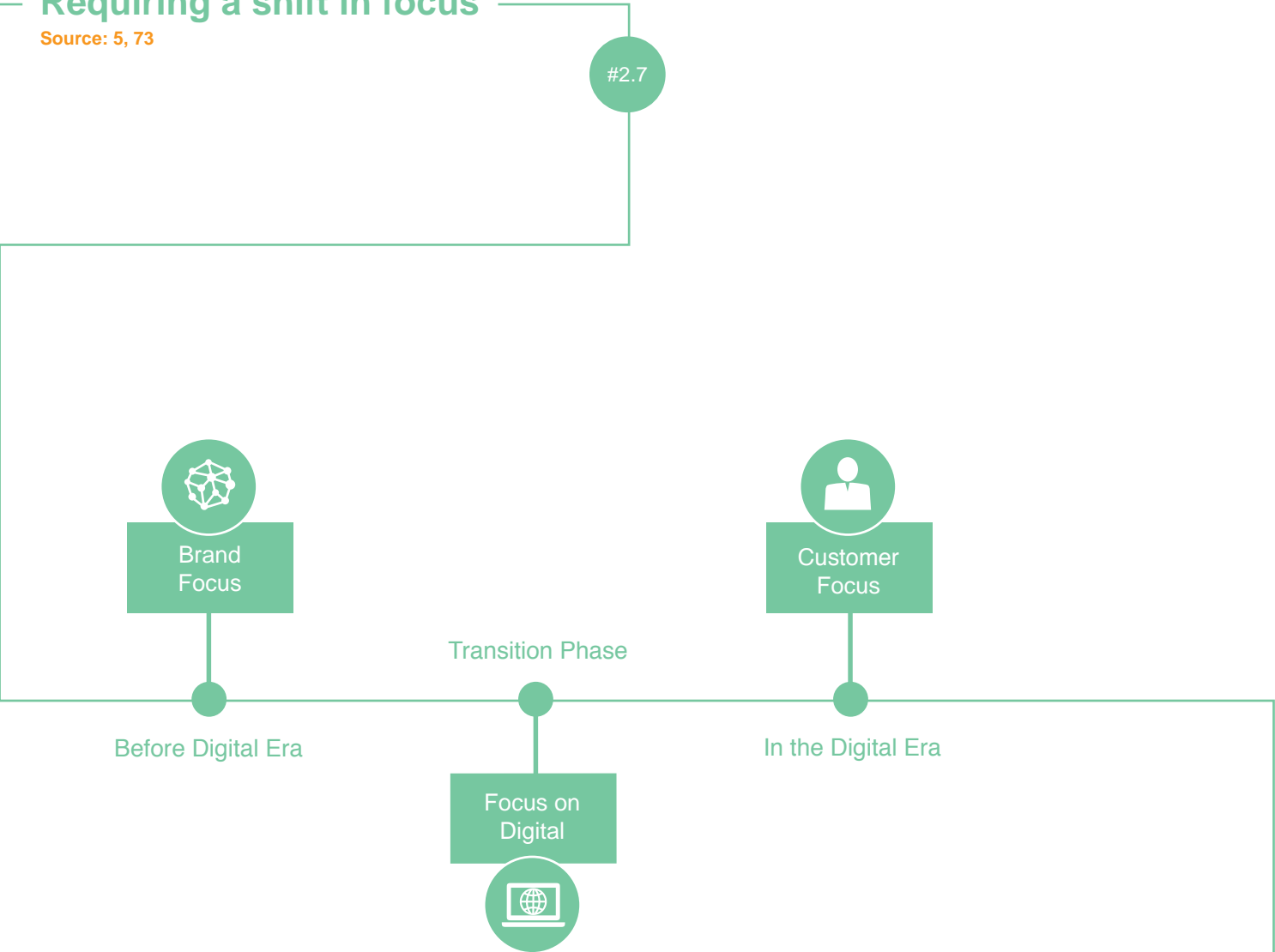
“I also started to shift our business away from a transactional model that was focused on physically selling the drugs to delivering an outcome-based approach to add value beyond just the pill. I really believe that in the future, companies like Novartis are going to be paid on patient outcomes as opposed to selling the pill.”

Joseph Jimenez, CEO Novartis

As the health care eco-system continues to shift and evolve, pharmaceutical companies are being challenged to adapt their commercial models to offer individualized value propositions increasingly centered on delivering health outcomes.

Requiring a shift in focus

Source: 5, 73



This new era requires that companies rethink how they interact with patients, payers, providers and governments in both mature and emerging markets—with speed, with the right information, and scaling their efforts to each target audience. This is a significant

change from the focused “feet on the street” model that worked well in mature health care markets. Becoming a digital business represents a fundamental shift in the approach to health care practitioners (HCP) and patient engagement.

“If we look around the world, there are public research laboratories, universities, and government research organizations which collectively have about a million people doing research in many different kinds of cutting-edge technology. **It’s vital we track their progress so that we are able to obtain rights to the most promising new research coming out of the public sector.**”

Yasuchika Hasegawa, CEO Takeda

#2.8

And early identification of external partners

Source: 85



The “trust” gap: Leveraging digital to reconnect with stakeholders

#3

A 2013 survey of patients found that only 35% agree that multinational pharmaceutical companies have an “excellent” or “good” reputation.⁷⁷

Issues regarding drug safety, results of clinical trials, pricing and sales practices have undercut public perception of the pharma industry^{88, 89}, creating an “engagement paradox,” a disconnect between what patients and HCPs want from pharma, and what the industry wants from its key stakeholders.^{69, 77}

The new digital open society – with instant availability of data and information, and opportunities to stimulate active conversations – can increase transparency and help close this perception gap.

But before companies can deliver relevant content, they must first map unmet stakeholder needs, including the entire patient pathway. The patient pathway serves as a central framework for understanding treatment patterns, identifying value-driving factors of a product,

and developing accordant health outcomes-oriented value propositions.¹⁴

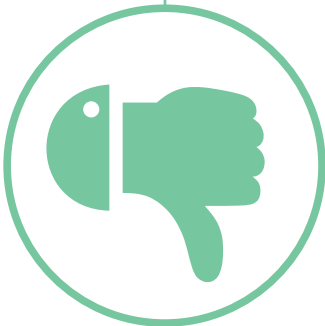
Aligning digital health assets with maps of unmet need for patients and HCPs, and delivering these assets through the transparency of the digital environment, creates desired outcomes for all stakeholders: healthier lives for patients; fulfillment of mission for HCPs; cost control for payers; and, ultimately, having patients start on treatment and stay with treatment.

Top management must establish and support internal ethics and compliance procedures while communicating these commitments to the outside world. Digital presents an opportunity for pharma firms to reassert themselves as reliable sources for critically important information, not only on products, but on the diseases and conditions those products treat.

Pharma has a poor reputation

Source: 77, 78

#3.1



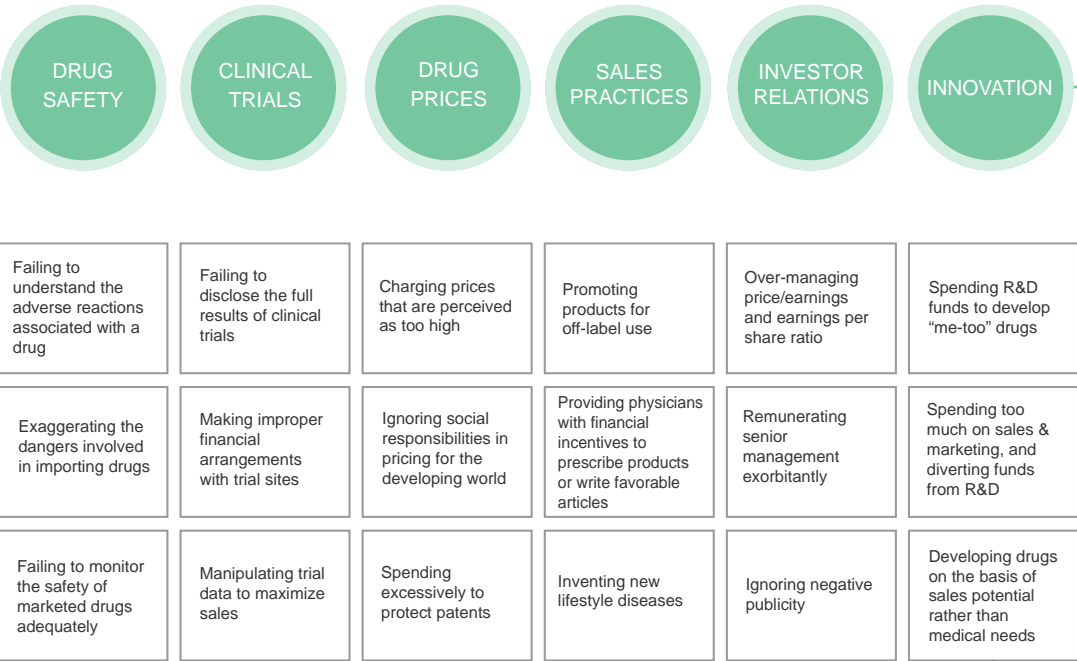
ONLY 59%
of the general population trust
the Pharma Industry.

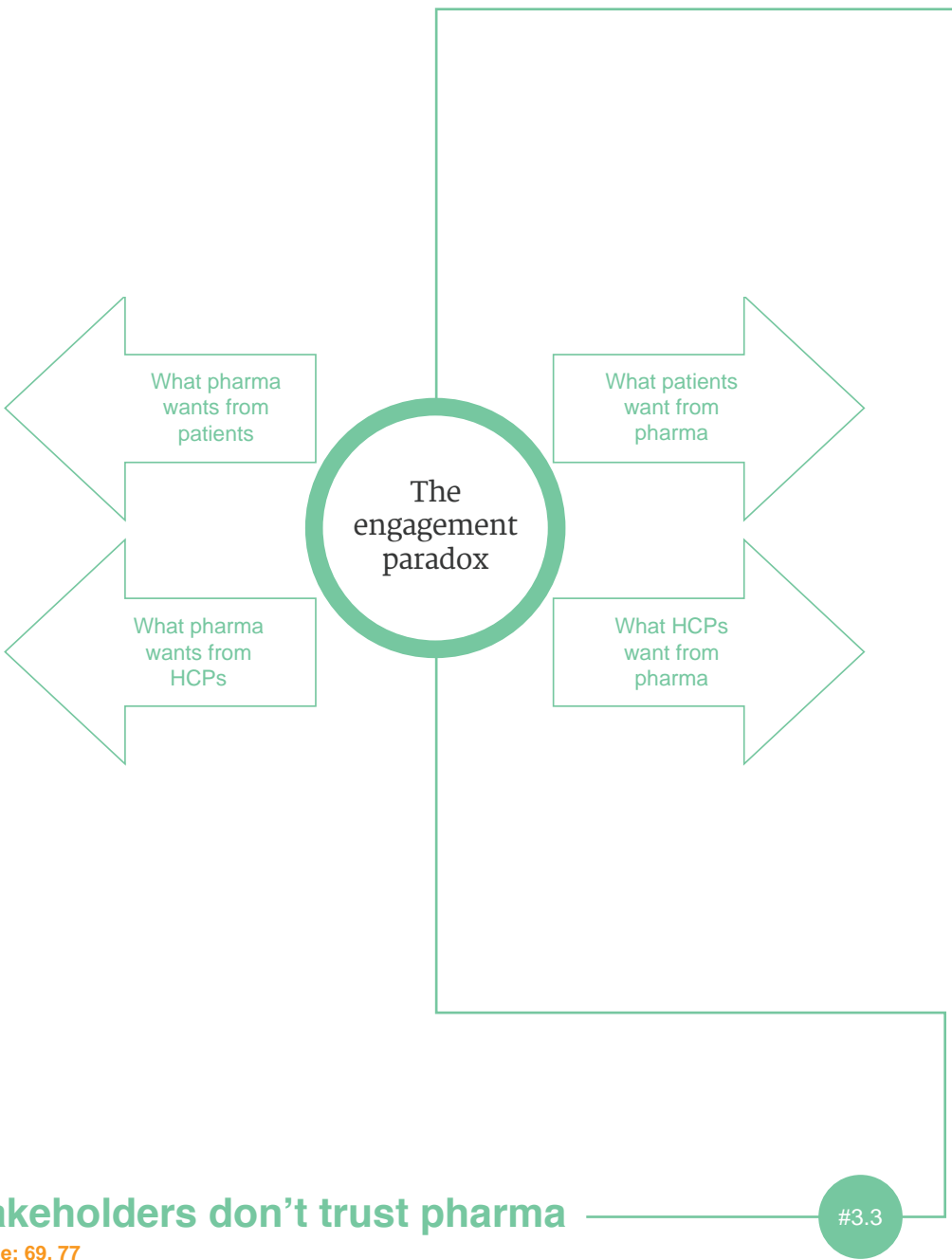
ONLY 35.4%
of patient groups believe that
pharma companies have a good
reputation.

For many good reasons

Source: 86

#3.2





Stakeholders don't trust pharma

Source: 69, 77

#3.3

Pharma must share data openly to rebuild trust

Source: 87

#3.4

“As we’ve moved to a more open society, and where data becomes more open, we’ve been slow to adapt and understand there’s a broader stakeholder [base] than just physicians. I think the industry is making huge strides on that and is now aware of the need to close what I think is a perception gap between how we know we operate and how we’re perceived to operate... For me, the most important thing ... is that society trusts our data. Because in the end, that’s what makes our products, is the data that stands behind them.”

Ian Read, CEO Pfizer

And do so with full integrity

Source: Valtech customer

#3.5

Example: Industry Integrity Principles Application* contains 7 principles of pharma business practices:

- 1 Independence of HCPs (Healthcare Professionals)
- 2 Purpose of interactions with HCPs
- 3 Separation between promotion and non-promotion
- 4 Promotional content
- 5 No pre-approval or off-label promotion
- 6 Adverse events reporting
- 7 Privacy of patient data

* The Industry Integrity Principles Application defines global minimal standards for the most common practices. In addition, any practice must comply with all applicable laws, regulations, and industry codes, as well as with local company standards, which may impose more stringent requirements.

Digital will become the preferred channel of trust



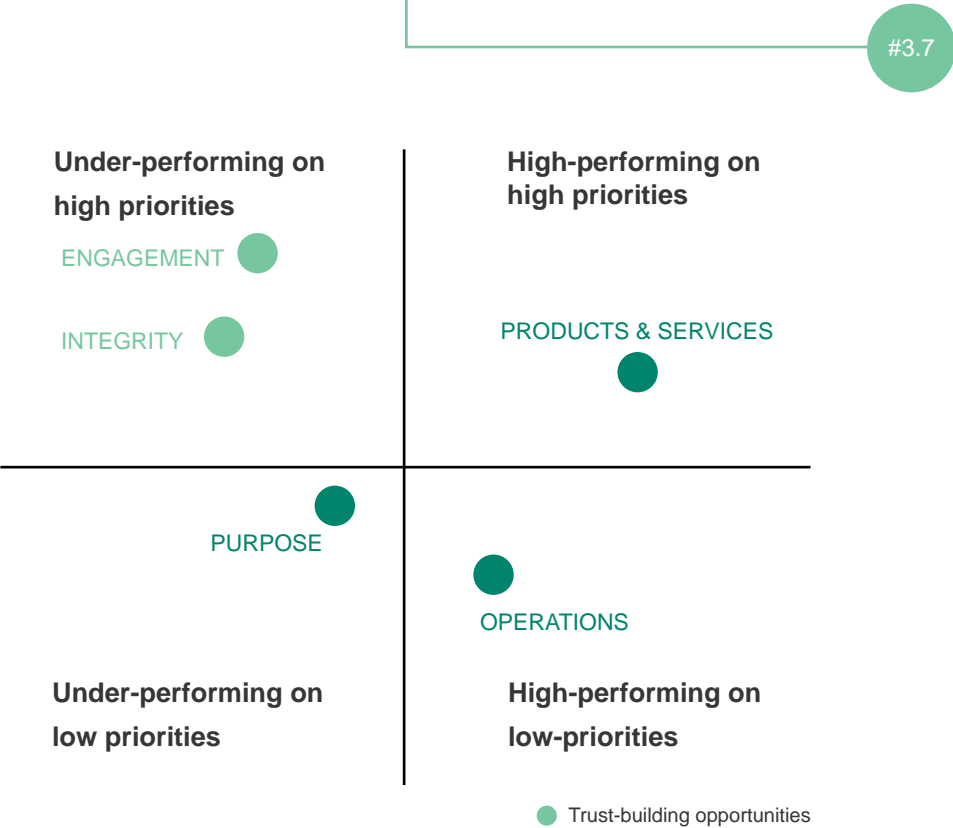
#3.6

Digital will become the mediator

Source: Valtech

Engagement and integrity: Priority areas for pharma to build trust

Source: 78



Engagement

- Listens to customer needs and feedback
- Treats employees well
- Places customers ahead of profit
- Communicates frequently and honestly on the state of its business

Integrity

- Has ethical business practices
- Takes responsible actions to address an issue or a crisis
- Has transparent and open business practices

Products & services

- Offers high quality products or services
- Is an innovator of new products, services and ideas

Purpose

- Works to protect and improve the environment
- Addresses society's needs in its everyday business
- Creates programs that positively impact the local community
- Partners with NGOs, government and 3rd parties to address societal needs

Operations

- Has highly-regarded and widely admired top leadership
- Ranks on a global list of top companies
- Delivers consistent financial returns to investors



Tapping into the unmet needs of stakeholders

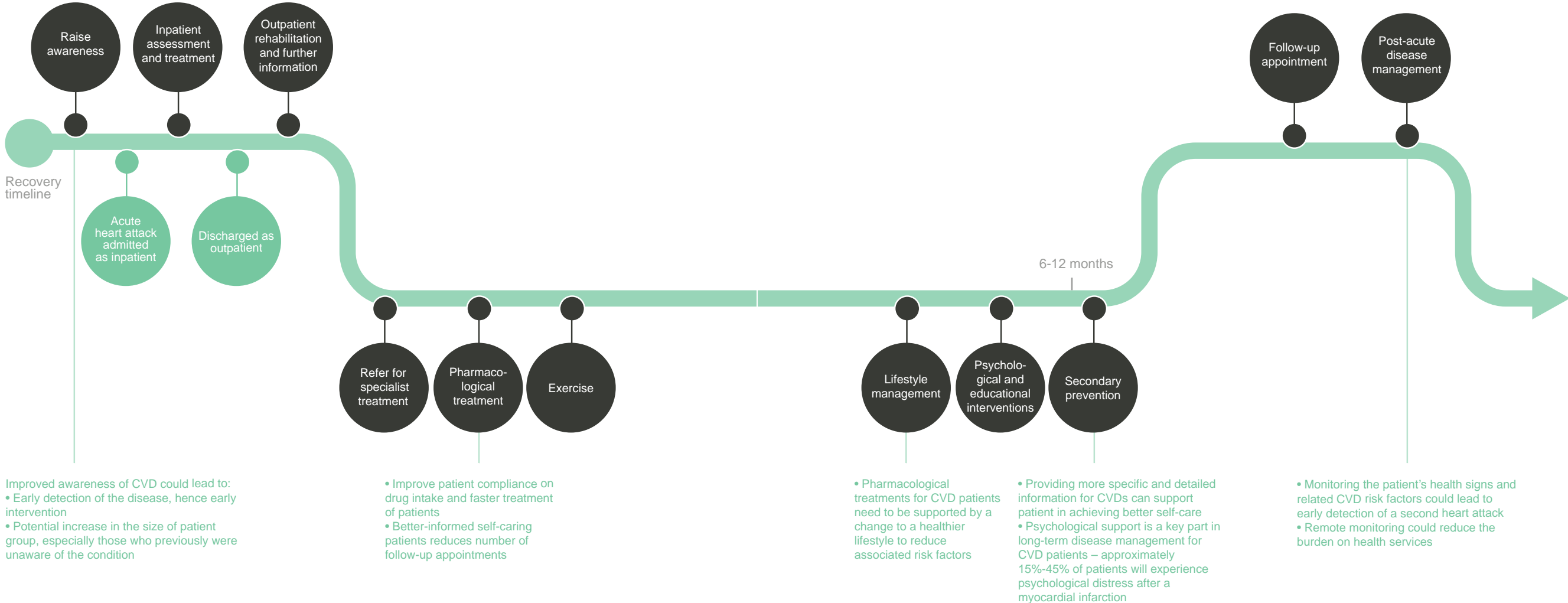
Source: 13

#3.8

Mapping entire patient pathways

Source: 14

#3.9



The patient pathway serves as a central framework to understand treatment patterns, to identify value-driving factors of a product and to develop accordant health outcomes-oriented value propositions.



To know when digital engagement matters and for what reason

Source: 88

#3.10

Share: How likely are you to share health information through social media with health-related companies/individuals?

Trust: How likely are you to trust health information posted online through social media by health-related companies/individuals?

Engage: Have you ever viewed health related information or done health-related activities using social media?

By identifying win-win engagement zones

Source: Valtech

#3.11

That will transform any marketing effort into a value adding end-user application

Source: 89

#3.12

- Unmet stakeholder need has been identified
- Unfulfilled business potential has been identified
- Change in stakeholder behavior motivated by unmet need will positively impact unfulfilled business potential
- Change in stakeholder behavior will be triggered by digital engagement
- Cost-effective digital assets can be produced to support engagement

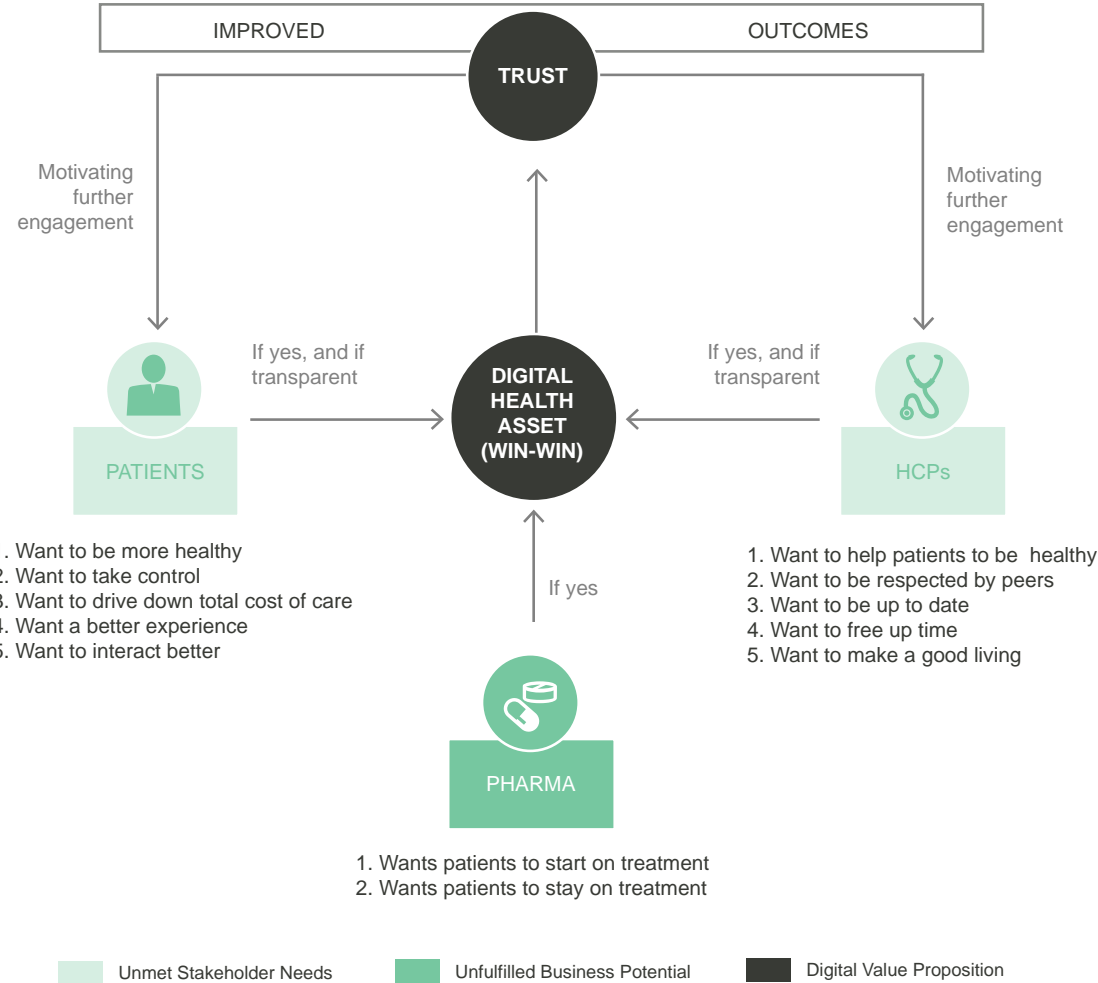
Conditions required

Potential win-win engagement zones

PATIENT PATHWAY	Terminal care							
	Long-term care							
	Monitoring							
	Treatment							
	Diagnosis							
	Help-seeking							
	Symptoms							
	Prevention							
	Wellness							
		Payers	Pharmacists	KOLs	Specialists	GPs	Relatives	Patients
		STAKEHOLDER GROUPS						

“What sometimes gets underestimated in terms of innovation is the importance of “marketing”. And by that I’m not referring to clever TV commercials – but **really explaining to end-users the benefits of a given product** so that the optimal application of these products are achieved.”

Marijn Dekkers, CEO Bayer



Offering a transparent value proposition

Source: Valtech

#3.13

Or even claiming non-commercial ownership of diseases

Source: Valtech

#3.14

Scientific goodwill within thought-leader community

Become a trusted resource provider for HCPs

More ethical approach compared to competitors

ADVOCATE THE DISEASE
DON'T PUSH THE PRODUCT

Own the disease

More likely to impact stakeholder behavior

Less legal restraints

#4

Reinventing the marketing function for a digital environment

A recent survey found that only 16% of pharma execs are satisfied with their companies' current digital activities, and 84% consider it crucial to have a digital health strategy in place by 2020. Only 13% believe it is crucial to have such a strategy today. ^{55, 57, 58}

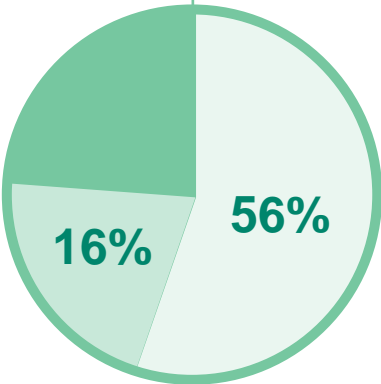
These numbers represent a stark reality: pharma execs are “behind the curve” in exploiting digital marketing, not surprising given the key bottlenecks facing the industry including regulatory and legal issues, ROI questions, insufficient internal knowledge and lack of clear vision. ⁵⁷

The paradigm shift to digital requires a serious rethinking of the marketing function and organizational design, and must involve all relevant internal stakeholders (marketing, medical affairs, legal, regulatory, corporate communications, etc.).

Cross-functional teams must review, update and improve the broader customer relationship strategy while simultaneously refining tactics that target specific segments within patient and practitioner communities. ⁵

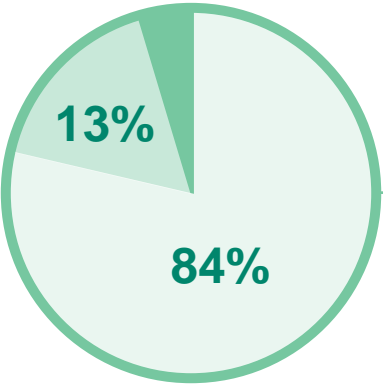
Each company must decide on the appropriate design that best fits its structure and available resources. These choices can be based on both the size and needs of the company, together with the degree of internal digital expertise available in the organization or the willingness to invest in external expert resources.

A successful digital strategy must provide true business innovation that addresses the four key bottlenecks. A design that breaks down organizational silos – a huge challenge to most global pharma companies – is vital to achieving optimal success in the digital realm.



56% are unsatisfied with their companies' current level of digital technology implementation. Only 16% are satisfied with current digital activities.

Digital strategies are on the rise.



84% consider it crucial to have a digital health strategy in 2020, compared to 13% who believe it is already crucial today.

Pharma needs to catch up on strategies to recover

Source: 55, 57, 58

#4.1

To address top four bottlenecks and go beyond “incremental thinking” to deliver true business innovation

Source: 57

#4.2



NO CLEAR VISION

ROI QUESTIONS

REGULATORY/
LEGAL ISSUES

INSUFFICIENT
INTERNAL
KNOWLEDGE

“The worst mistake you could make is to take your existing analog interaction patterns with customers and transfer them to the web. While existing channels need to be enriched with digital, this is just an “incremental” step. The real opportunities lie elsewhere... Don’t transfer, but re-think. On the positive side, companies are starting to think beyond the “digital brand /TA” strategy and are starting to realize that **the customer should be put at the heart of their business...** necessitating a company-wide / cross-functional, integrated strategy and approach.”

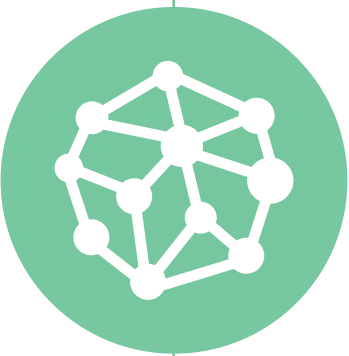
Beverly Smet, VP Across Health

#4.3

Supported by enhanced organizational capability

Source: 5

The idea that a single subgroup – for instance sales or marketing – is responsible for the entire “digital” channel and the relationships it supports does not make sense anymore.



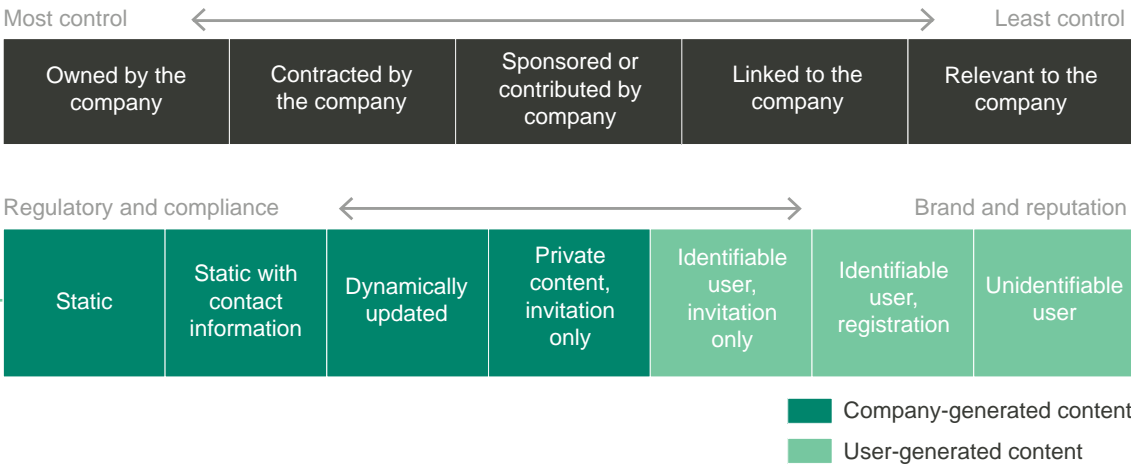
To build and nurture digital relationships with customers, pharmaceutical companies should create a cross-functional team responsible for reviewing, updating, and improving their customer-relationship strategy, one that is at once holistic and yet still targeted to specific segments within patient and practitioner communities.

The strategy should enable a better understanding of customer interactions; identifying questions to be answered to develop a holistic view of the customer and identifying how different techniques can support their digital efforts.

#4.4

And the understanding of risk drivers

Source: 15



Digital monitoring and risk mitigation is a 24x7 job: As regulatory guidelines continue to evolve, clear politics and procedures are needed that will help staff understand the importance of digital use – and

share accountability for avoiding risk. Companies must ensure that they have enough human capital to respond online at any moment, in any time zone, on any channel.



#5

Follow the 20-20-20 rule for digital budgets

With pharma playing “catch-up” in digital marketing, the benchmark for 2014 is simple and clear: Digital should be 20% of the overall marketing budget, based on a 20% digital budget increase, with 20% of the total digital budget devoted to strategic planning.

Last year, digital constituted only 15.3% of overall marketing budgets.⁵⁷ Digital spending is expected to jump 16% from 2013 to 2014, with digital grabbing a steadily growing share of marketing budgets into 2017.^{42, 43} Within digital, spending will increasingly target key stakeholders in the channels they use most frequently: mobile for HCPs, and mobile, video and social media for patients, a significant shift away from traditional tactical marketing spend.^{38, 40}

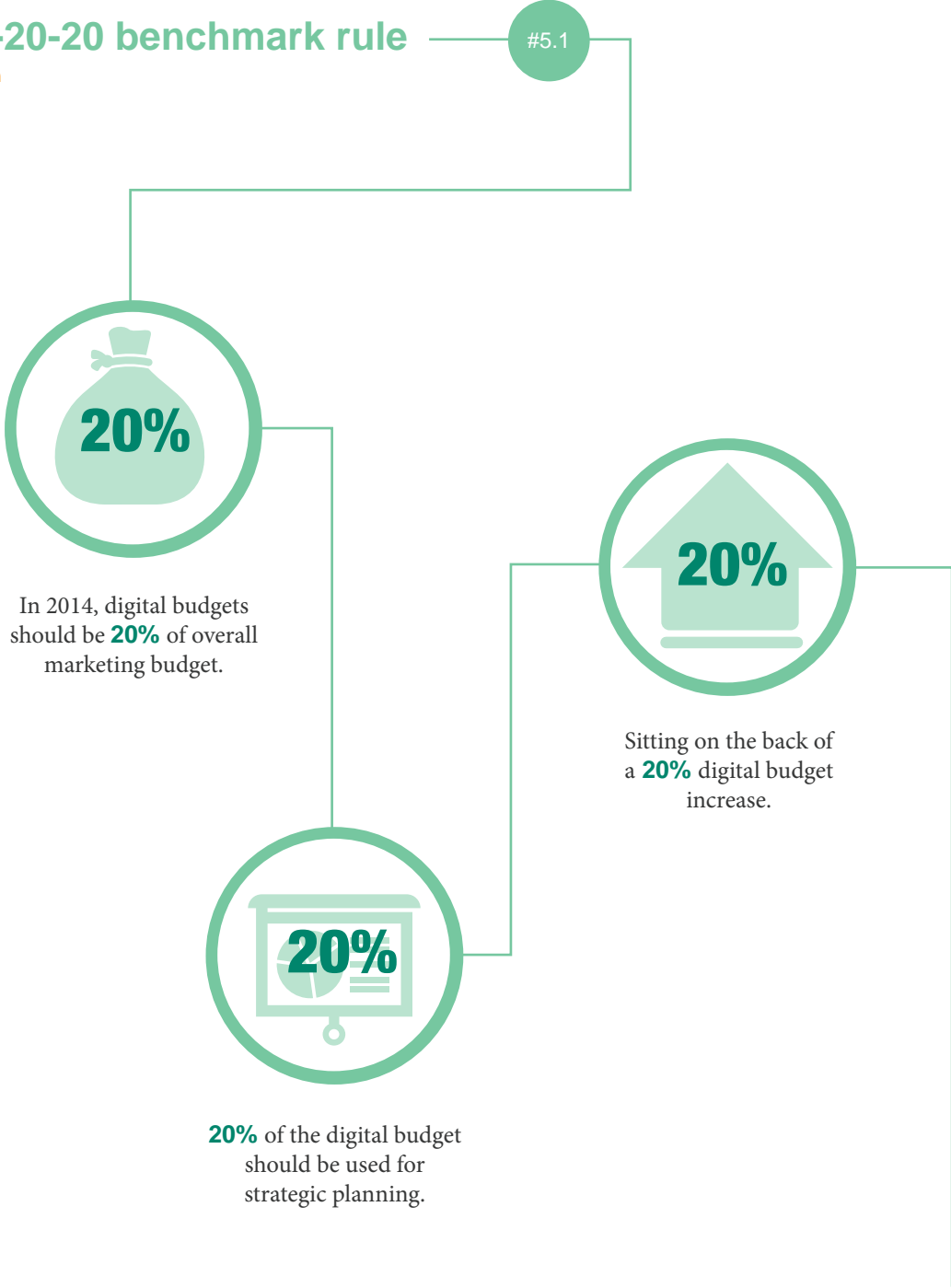
In the new normal, access to, and ownership of, outcome data will drive the value proposition. Pharma execs are looking at different investment tactics to make that happen: buy (acquire), build (add to existing internal structure), or borrow (outsourcing).¹⁷ In addition, such investment will support efforts to create cost efficiencies in customer acquisition and retention, build profitability and market share, and streamline R&D and other internal processes.

Maximizing ROI for digital investments will mean finding the perfect balance between “soft” and “hard” KPIs, making sure that each is anchored in, and supports, the overall business plan, for the company and for each therapeutic area and associated brand.

The 20-20-20 benchmark rule

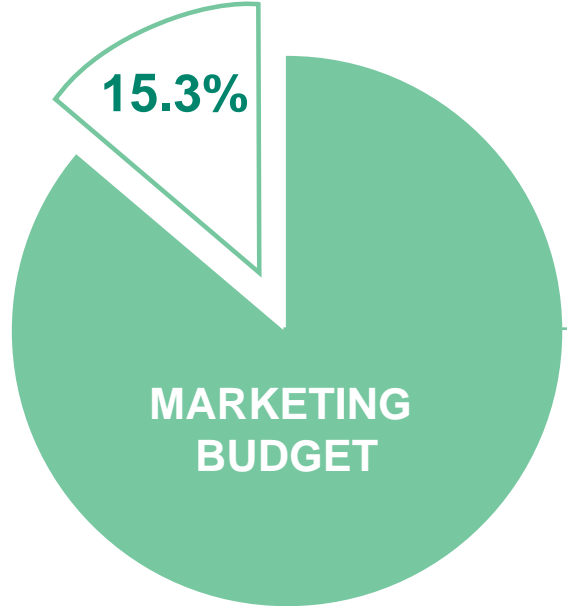
Source: Valtech

#5.1



Digital currently constitutes 15.3% of the overall marketing budget*

*If you oversee a marketing budget, which percentage of it is allocated to digital initiatives this year?



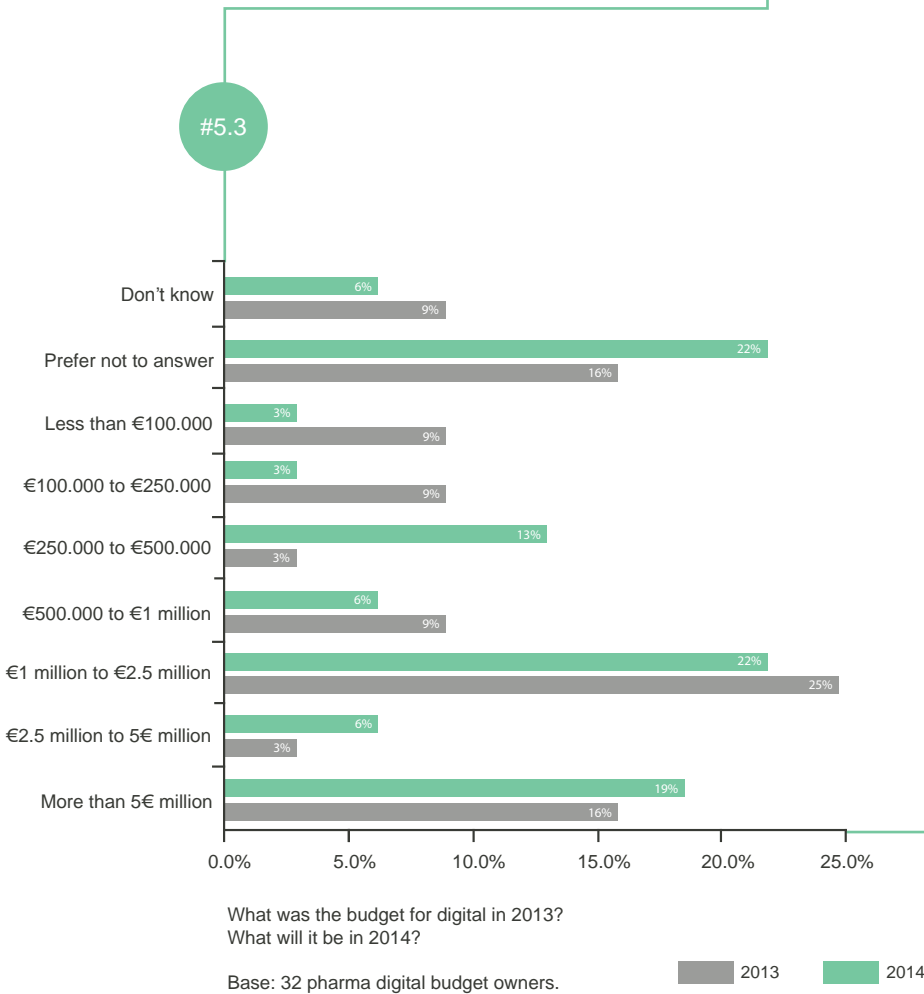
Pharma is behind on digital spending

Source: 57

#5.2

Digital spending is on the rise in 2014

Source: 42



We found that sponsors typically support 9 countries and 13 brands on average and are working with a budget of about 2.1 million in 2014, a rise of about 16% compared with 2013.

And the spending increase will continue throughout 2017

Source: 43



Advertising spending on paid digital media by the US Healthcare and Pharmaceutical Industry will hit \$1.18 billion in 2013 and rise to \$1.47 billion by 2017. Though spending is growing quickly in some less-regulated sectors of the healthcare industry, continued privacy

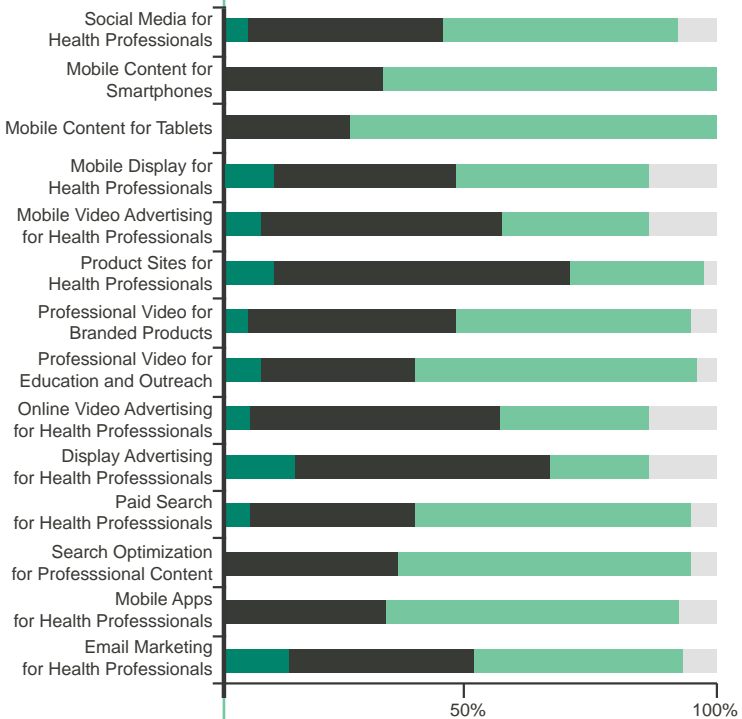
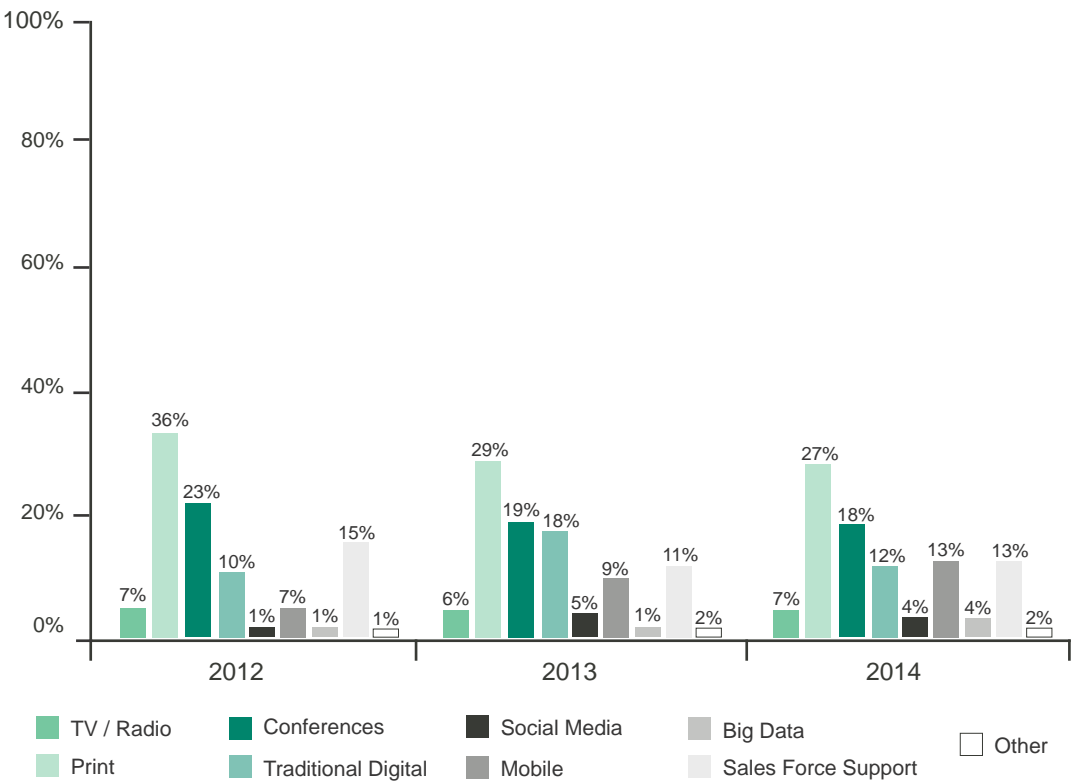
concerns, regulatory uncertainty around prescription medicines and patent expirations for blockbuster drugs will continue to put a damper on pharmaceutical-related investments.

Digital's impact on overall marketing mix

Source: 42

#5.5

% digital share of marketing budget vs. budget size



The top 3 budget increases across HCP tactics are: 1) Mobile content for tablets (78%), 2) Mobile content for smartphones (73%), 3) Mobile apps for health professionals (61%)

The average increase across different HCP tactics is 48%.

%-volume of budget owners expecting x, e.g. increase

Decrease
Stay the same
Increase
Don't know

#5.6

Spending increase across all digital HCP tactics. Mobile dominates

Source: 40

There is significant movement between tactical spending buckets. Mobile and social dominate

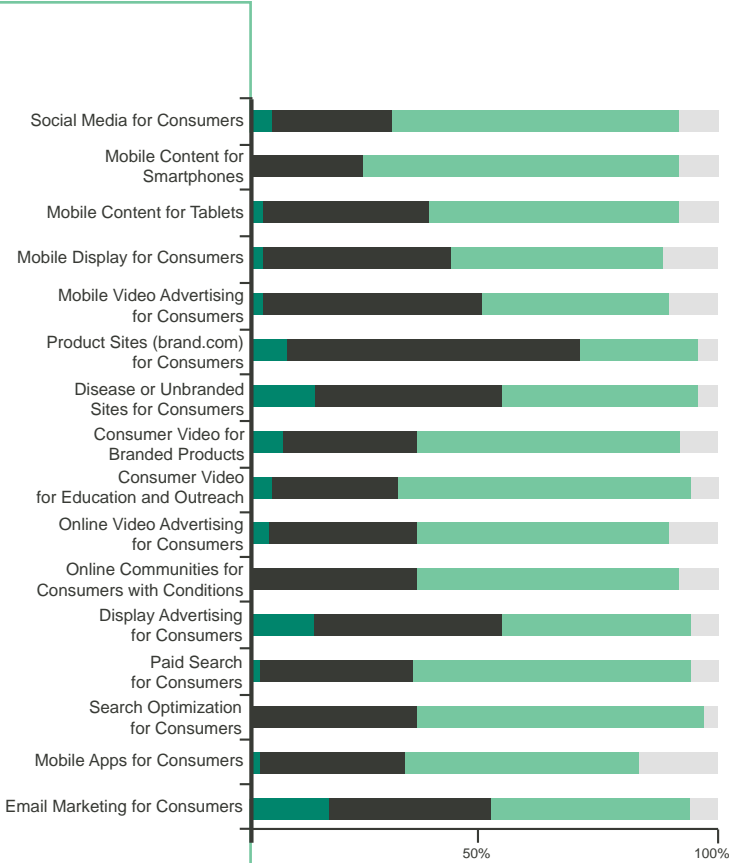
Source: 38

#5.8

Overall	Increase in Budget	Decrease in Budget	TOP 3 HCP Marketing Tactics	Increase in Budget	Decrease in Budget
Spending on digital	72%	5%	1) Mobile / tablet apps	72%	5%
Branded vs. Non-branded			2) Social Media	70%	7%
Branded	46%	15%	3) Digital sales material	68%	10%
Non-branded	26%	29%			
TOP 3 Stakeholder groups	Increase in Budget	Decrease in Budget	TOP 3 Patient Marketing Tactics	Increase in Budget	Decrease in Budget
Physicians	83%	13%	1) Mobile / tablet apps	83%	13%
Patients	74%	7%	2) Social Media	74%	7%
Payers	64%	16%	3) Digital ads	64%	16%

Companies have been forced into changing the way they develop products, the way they do business and the way they interact with customers. These changes are already manifesting themselves into the marketing functions, as companies begin shifting priorities, retooling resources and reallocating investment between brands, channels, tactics and audiences.

The results reveal that while overall marketing budgets remain fairly flat this year, there has been significant movement between the tactical buckets - namely an increase in digital spend at the expense of some of the more traditional channels.



The top 3 budget increases across patient tactics are: 1) Mobile content for smartphones (68%), 2) Consumer video for education and outreach (63%), 3) Social media for consumers (61%)

The average increase across different patient tactics is 49%.

%-volume of budget owners expecting x, e.g. increase

Decrease
Stay the same
Increase
Don't know

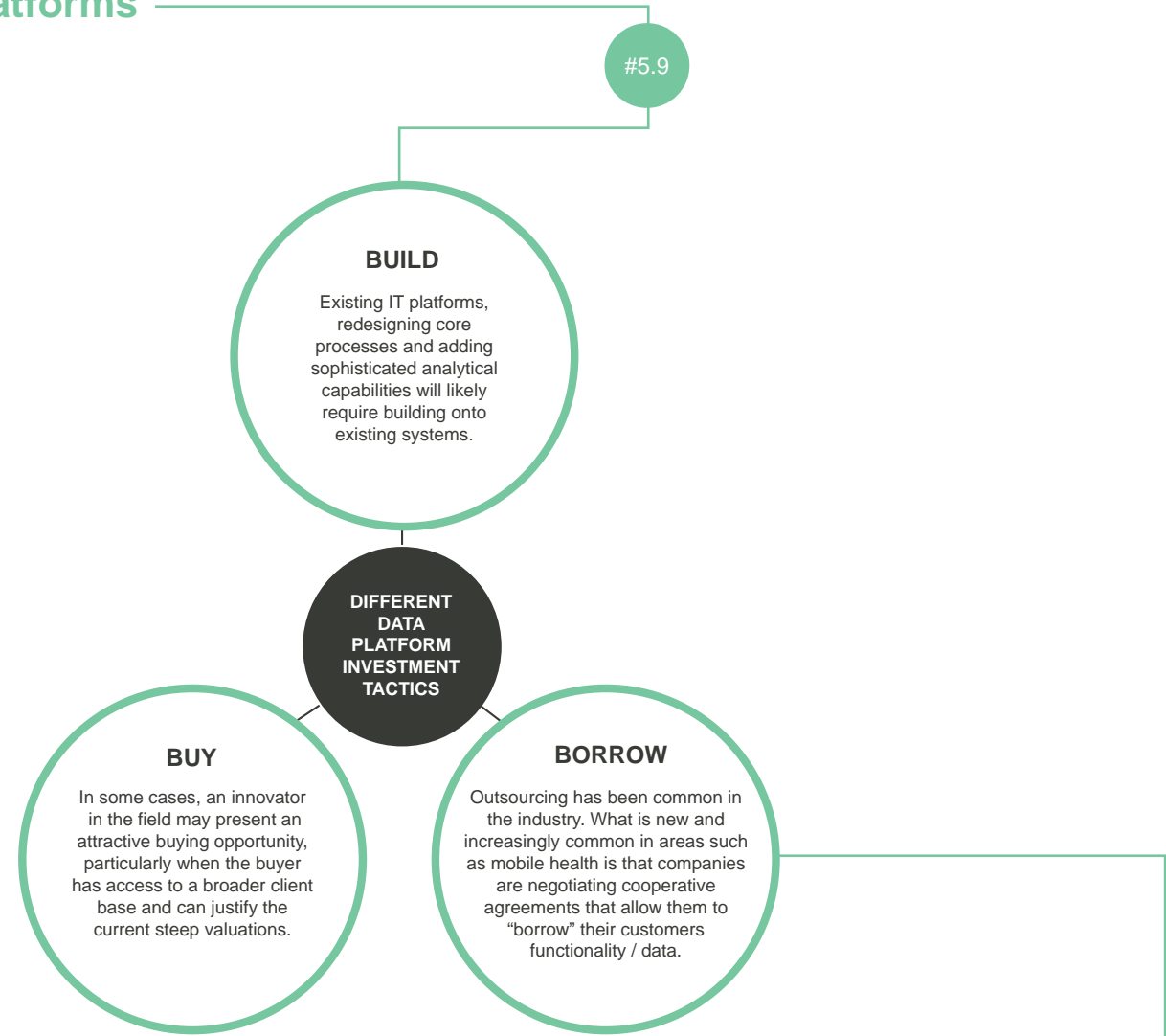
#5.7

Spending increase across all digital patient tactics. Mobile, video and social dominate

Source: 40

Consider the different investment tactics into data platforms

Source: 17



The pervasive use of the internet and mobile devices is of course altering how data is collected, analyzed, used and monitored. It provides more frequent data at a more granular level and provides the basis for refined analysis of treatments, drug interactions and iatrogenesis, and drug efficacy. All of this has implications on healthcare management, particularly in terms of IT and business portfolios.

Thus, executives need to figure where to place their bets. In such a dynamic market executives have a broad range of investment approaches to consider, along the lines of the "build, buy, borrow" options

Media Type	Definition	Examples
Paid	Your company pays for media space or a third party to promote the products	Television commercials, magazine and newspaper, product placements, web banners, search-engine marketing
Owned	Your company uses or creates its own new channels to advertise	Catalogs, web sites, Facebook fan pages, e-mail and customer databases, company owned retail stores
Earned	Consumers create media and/or share media your company created	Organic search placement, forwarding a popular commercial to friends, consumer ratings and reviews, rankings or community sites
Sold	Your company invites other marketers to place their content on its owned media	An e-commerce retailer selling ad space on its web site, a consumer marketer creating an online community and selling ad space
Hijacked	Your company's asset or campaign is taken hostage by those who oppose it	Consumers rallying opposition to a company on Facebook, consumers creating and distributing their own negative versions of ads

And the mix of media spending

Source: 75

#5.10

#5.11

Include digital as a part of investment tactics bringing end-to-end offerings to the customer

Source: 80

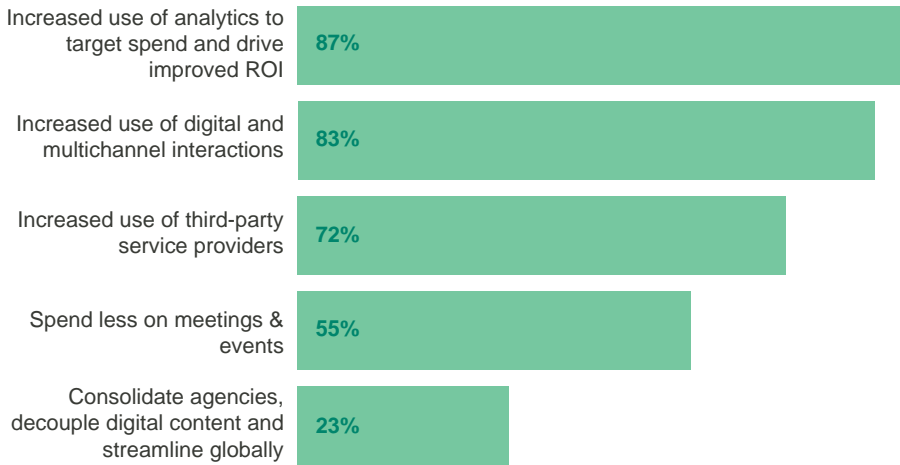
“The Animas division sells insulin pumps and infusion sets, and is developing an artificial pancreas; the wellness division could provide digital health coaching for customers; the Diabetes Institute could train health-care professionals on how to ensure compliance; and pharmaceuticals had a new diabetes drug, Invokana. Account managers would be familiar with the entire menu, not just the individual products.”

Alex Gorsky
CEO Johnson & Johnson

While executing top 5 cost reduction strategies and capability building

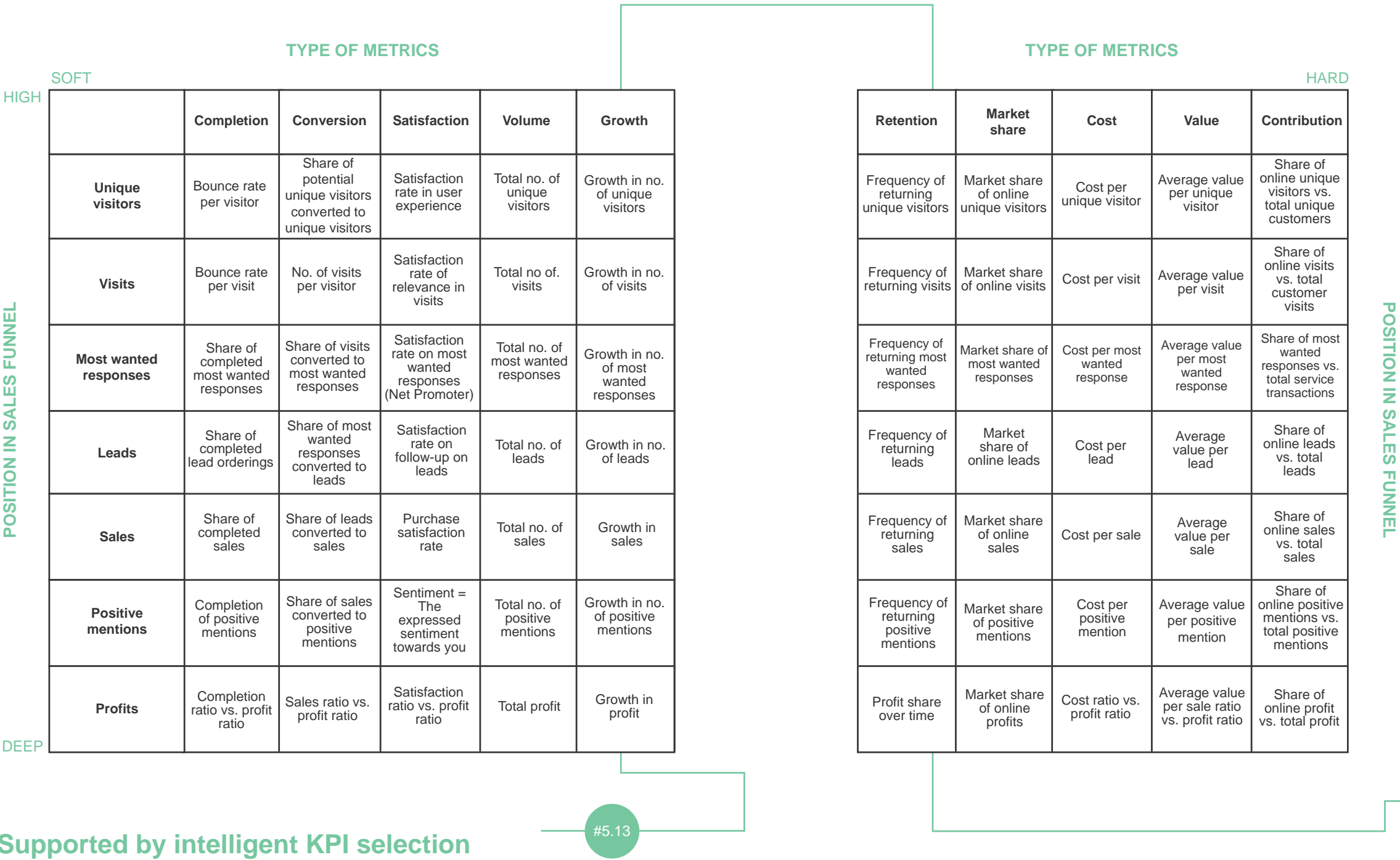
Source: 4

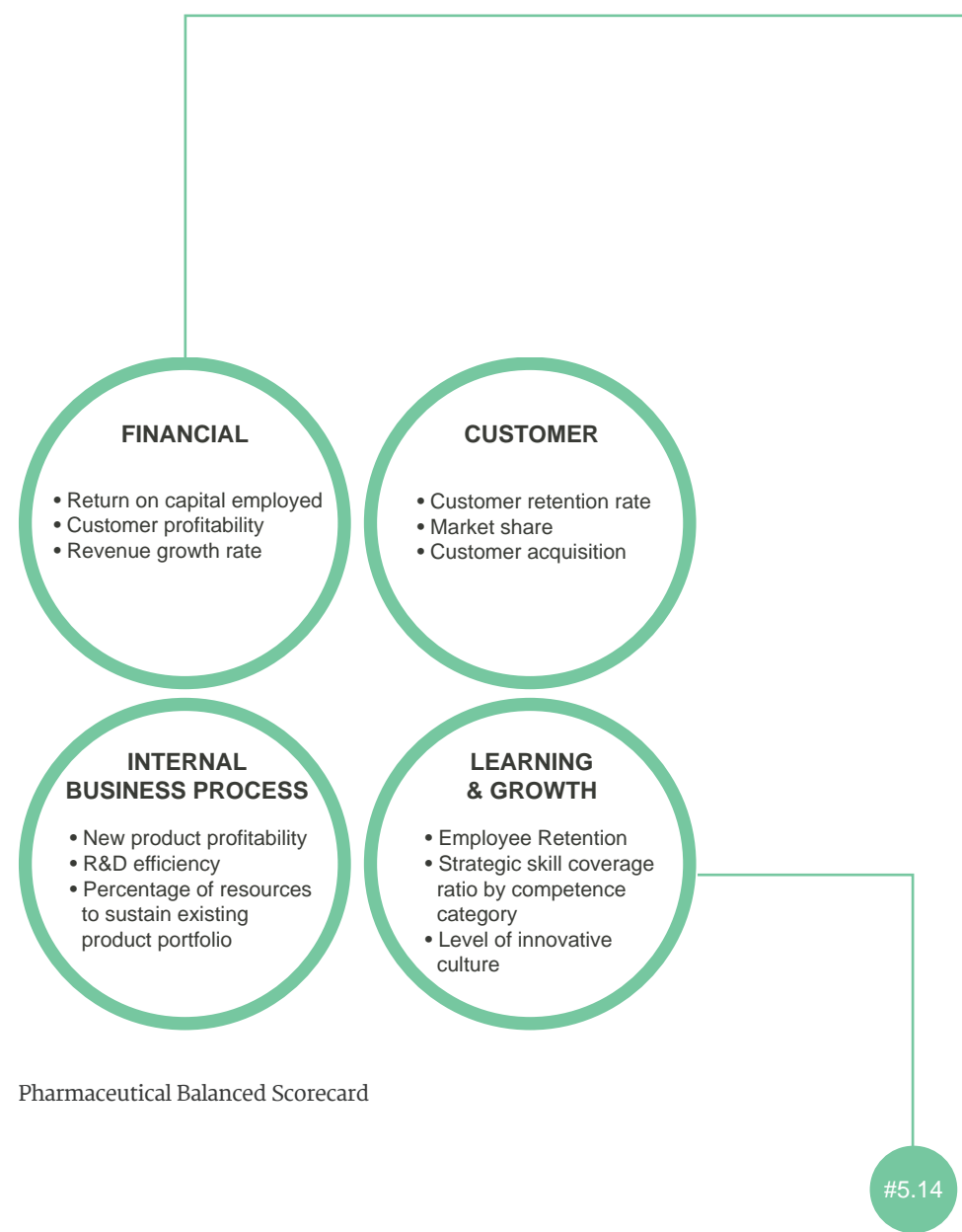
#5.12



Investments in capability building will focus on three areas: multichannel marketing, digital marketing and analytics.

• Over the last two years, nearly one in four direct sales force interactions have migrated to digital interactions with doctors, providers, payers and patients.
• Over the next two years, executives expect to increase their use of digital interactions by 26 percent on average. Mastering multichannel marketing, improved use and effectiveness of digital marketing and using analytics to improve ROI topped the list of the most important strategic priorities for the sales and marketing executives we interviewed, following cost reduction as the number one priority. These three areas, were also cited as the chief means to achieve their cost reduction goals, along with the use of third-party service providers. These are the “must have” capabilities in the new normal to become a high performer.





Pharmaceutical Balanced Scorecard

#5.14

Anchored in the overall business plan to secure “hard” measures

Source: Valtech

But still preserving complementary “soft” measures

Source: Valtech



#5.15

Additional “Return on” measurements to consider when assessing the impact of a digital program:

Return on Reputation (RoR): What is the indirect financial return of having a positive reputation in the public?

Return on Experience (RoE): What is the indirect financial return of creating positive stakeholder experiences (patients, doctors etc.)?

Return on Transformation (RoT): What is the indirect financial return of having a positive change in the digital engagement mindset of employees?

Collecting the ROI of digital marketing initiatives often requires companies to shift their means of calculating initiatives’ levels of return. Instead, teams incorporate the value posed by both hard and soft measurements. Soft metrics such as user uptake and number of Facebook “likes” do not translate into immediate financial returns. However, they do help companies determine initiatives’ potential impact well before

hard data are available. For example, if users are slow to engage with new digital initiatives, companies may wish to rethink their platform before investing additional funds into maintaining it. Additionally, in cases where hard data is not easily accessible, teams may leverage return on reputation (RoR), return on experience (RoE) and return on transformation (RoT) to measure indirect financial returns.



Megatrends #6-10

Stakeholders



Big data, mobile and social create a more level playing field; Pharma is slow to respond

#6

Patients used to rely on their doctors for critical health information. All that has changed.

Technology has given consumers more power. They can monitor their health, investigate treatment options, discuss options online with other patients, and find outcome data for drug therapies and other treatments. Pharmaceutical firms need to respond by leveraging their knowledge of diseases and conditions, and the therapies and products to treat these health issues, in innovative ways that serve and engage patients, HCPs and payers.⁹

The social buzz among pharma professionals on LinkedIn, according to a recent analysis, has been big data, mobile, social and gamification.⁶⁰⁻⁶⁴ In other words, the industry clearly recognizes this digital sea change.

When pharma professionals were asked to rank their companies' digital initiatives targeting HCPs, patients and payers versus their competitors, they were most confident with efforts directed at HCPs.⁵⁷ But is pharma leveraging the right tactics and channels to reach key stakeholders? In a patient-centric environment, pharma must make patient engagement a higher priority.

HCPs and patients are frequent users of digital, with 67%⁷⁶ of physicians actively using mobile technologies as part of their jobs, and patients relying on mobile (85%)¹⁰⁰ and social (42%)¹⁰¹ to gather health-related information. Conversely, mobile apps and social media score low on perceived ROI among pharma execs⁴⁰, illustrating the striking "engagement paradox" between where stakeholders are seeking health information, and the tactics and channels pharma is using to engage these stakeholders.

Pharmaceutical companies must ramp up digital strategies with short-term, mid-term and long-term goals clearly defined. Initially, senior management must lead the way with a strategy based on mapping the needs of patients, HCPs and payers, while also seeking input from informed external sources. In the mid-term, cross-functional teams comprised of members of all key internal stakeholder groups must build trust among external audiences. This may mean detaching the marketing function from the sales organization, and leveraging appropriate tactics and channels to reach these audiences. Finally, the long-term strategy (3-5 years) involves linking revenue to performance, evaluating external efforts and publishing findings, with the expectation that there will be setbacks along the way.⁷¹

Ground zero is a level playing field. Stakeholders expect honest information and help exactly when they need it

Source: 9, 32

#6.1



“We know that our customers, whether they are patients, caregivers, payers or healthcare professionals, are more savvy and empowered today than ever in our history. They are using technology to wring every last drop of relevant information from the world around them. They expect the companies they choose to interact with to put them first and provide value. They expect complimentary services and tools that expand the customer experience beyond the products. They expect honest information and help exactly when they need it.”

Faruk Capan
CEO Intouch Solutions

Thanks to the rapid advancement of technology, consumers now have access to more information than ever before. They can readily find out about and monitor their own health status; know what treatment options others in a similar situation have used; and find data on outcomes from drug therapy and other treatments. The “magic” of the science has been revealed, creating more of a level playing field than ever before - in both developed and emerging countries. The life sciences sector will need to respond appropriately by incorporating global knowledge and resources with new technologies to offer innovative, quality products and services that assist clinicians and consumers.



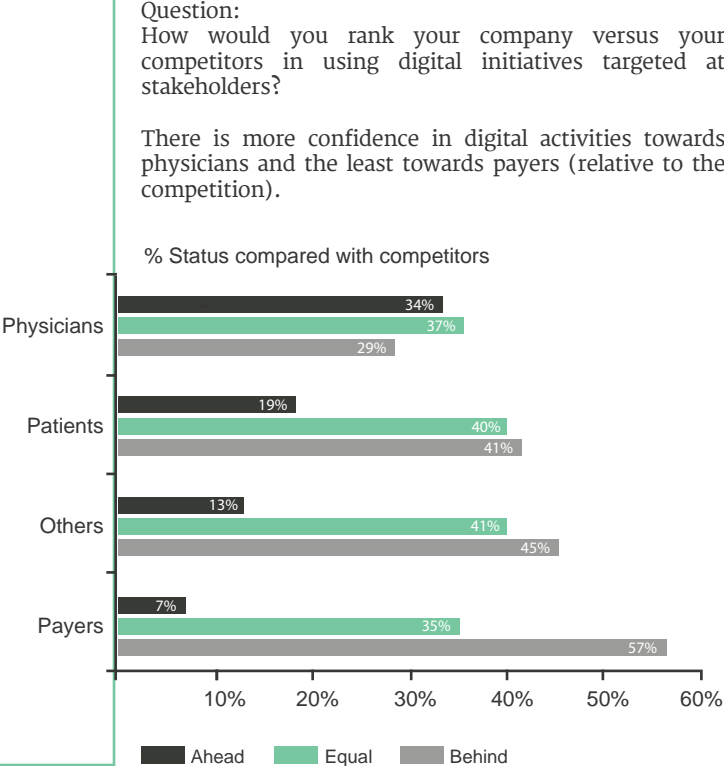
Analysis of 1000 most recent conversations on the TOP 5 digital pharma LinkedIn groups:

- 1 in 10 conversations is about big data
- 1 in 14 conversation is about mobile
- 1 in 33 conversations is about social
- 1 in 34 conversations is about gamification
- 1 in 67 conversations is about payer strategy
- 1 in 125 conversations is about eDetailing

#6.2

Big data, mobile, social and gamification are the most trending topics

Source: 60, 61, 62, 63, 64



#6.3

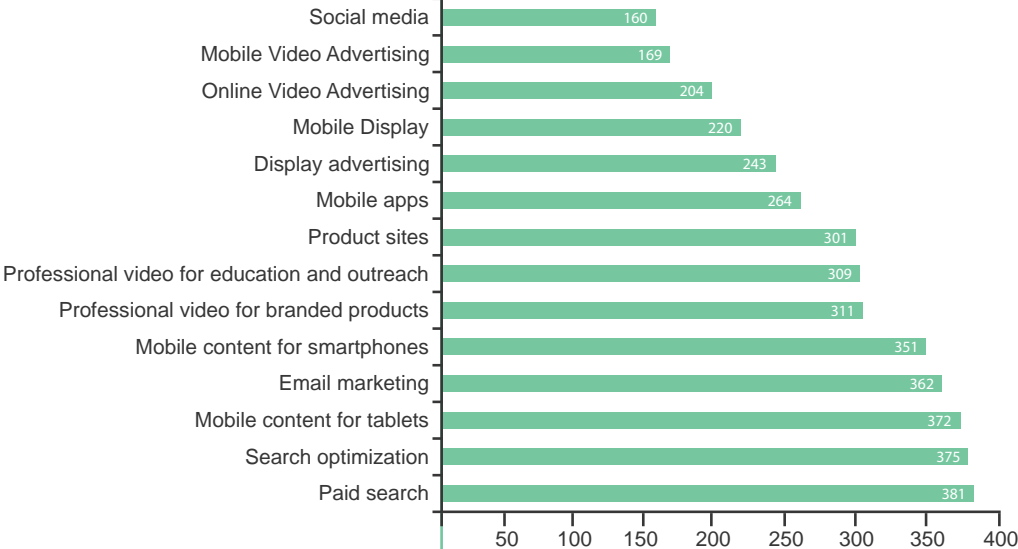
Pharma must gain confidence in engaging across all stakeholder groups

Source: 57

Pharma has low ROI confidence in trending HCP activities

Source: 40

#6.4



Mobile apps and social media scores low on perceived Return on Investment (RoI) underlining the engagement paradox between what is trending from a customer perspective and what is cost efficient from a pharma perspective.

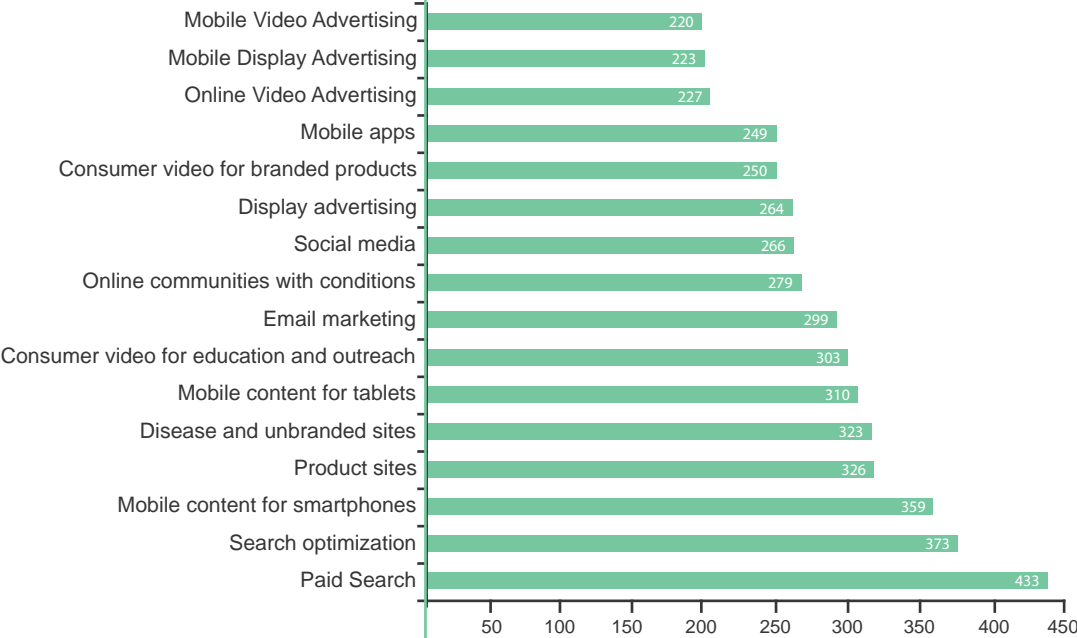
Scores also reflect that activities with a lower degree of maturity score lower in perceived RoI underlining the slow adaption speed of digital within the Pharmaceutical Industry.

“Total score” is a weighted calculation. Items ranked first are valued higher than the following ranks, the score is the sum of all weighted counts. The potential maximum score is 450.

#6.5

Pharma has low ROI confidence in trending patient activities

Source: 40

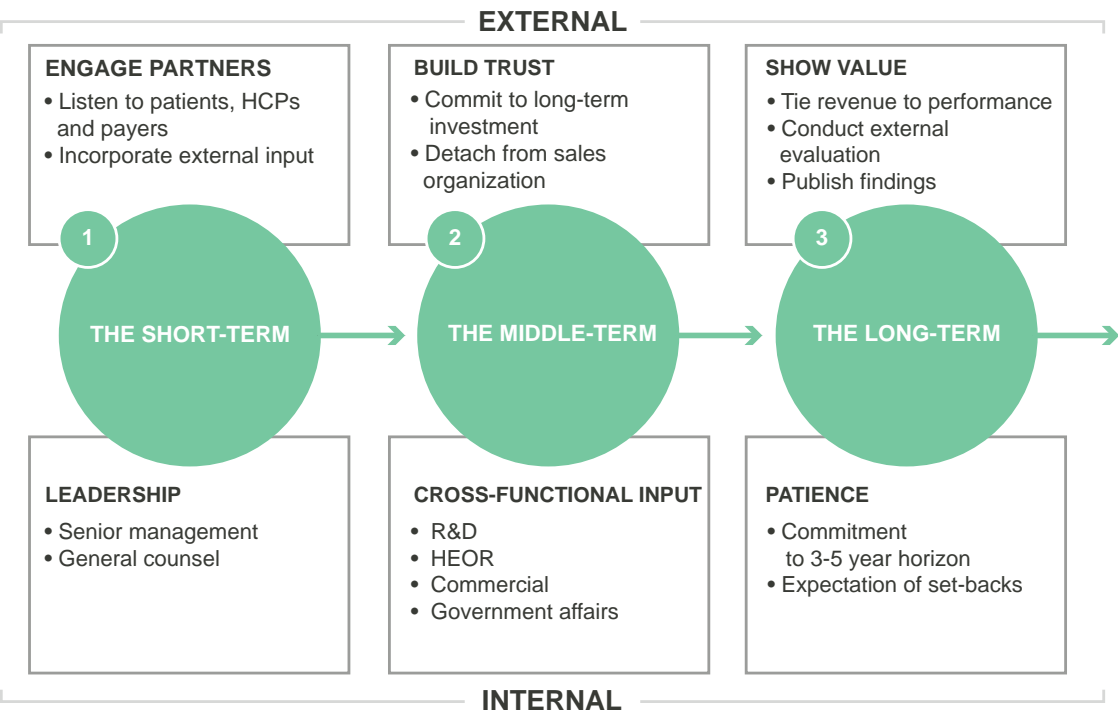


"Total Score" is a weighted calculation. Items ranked first are valued higher than the following ranks, the score is the sum of all weighted counts. The potential maximum score is 450.

#6.6

Pharma needs to react quick, but still keep their patience

Source: 71





In the new era of quantified self, patients want pharma on their side

#7

The business case for keeping “the healthy” healthy is undeniable. Consumers can now leverage technology and big data to monitor the state of their health and practice preventive measures. Yet a majority of healthcare resources are still devoted to treating the sick. With the fastest growing global age segment now 85+, “sickcare” is unsustainable.^{21, 25}

There remain many misconceptions among patients over what health conditions individuals can fully control.²¹ Opportunities to educate and influence the public align with the desire to proactively manage health.

Patients are looking to pharma to provide select patient services, but have been severely underserved. However, those who receive such services place great value on them, and are willing to provide personal health information in order to receive free information and/or services.⁶ In addition, nearly three-quarters of patients in a recent focus group agreed that social media resources sponsored by, or created by, pharma would motivate them to talk with their doctors about specific pharma products.⁵²

The “5 Es” hold the key to understanding the dynamics and opportunities of digital engagement with patients⁶⁷: the Internet is the ENABLER; ECONOMICS are the trigger; patients are EMPOWERED; patients ENGAGE; and patient EXPERIENCE drives the choice. Consumers expect pharma to engage them in ways

in which they are already accustomed. Pharma has tended to try a “one-size-fits-nobody” approach that runs counter to a patient-centric model that supports providers, retailers, payers, and, ultimately, patients.^{6, 8} Focusing on the individual patient experience – and the subsequent data resulting from this experience – serves the dual purpose of engaging patients and providing the analytics to support product benefit claims.

Making customers “smarter” during the purchase experience builds loyalty and provides differentiation in a crowded marketplace.⁶⁸ Patient empowerment has replaced “Ask your doctor,” and data-based benefits provide a direct link between pharma and the end user.

Big data and digital health already provide meaningful insights for every stakeholder in the healthcare ecosystem, from linking cost and quality of care to health outcomes, to helping patients more actively manage their own health. The current lack of standardized formats presents a barrier to true, seamless implementation (interoperability), but there is no doubt that patients are more in charge than ever before.^{10, 23}

The business case of keeping the healthy healthy is on the rise

Source: 21, 25

#7.1

“Every patient carries her or his own doctor inside”

Albert Schweitzer

Now that brain health is of general interest, the question arises as to what sorts of behaviors help and hurt this most vital organ. What can we do to make it stronger—and what must we avoid? To find out how people think on this topic, we listed 30 behaviors and asked respondents to score each one in terms of its effect on the physical brain: 5=“Definitely good”; 4=“Possibly good”; 3=“Neither good nor bad”; 2=“Possibly bad”; and 1=“Definitely bad.”



The business case for keeping "the healthy" healthy is undeniable. Technology and Big Data makes it possible to monitor the state of your health and make preventative measures, rather than waiting for a disease or condition to break out.

The economic rationale behind preventative maintenance is established across most industries from the servicing of our private cars to railway infrastructures to escalators and elevators.

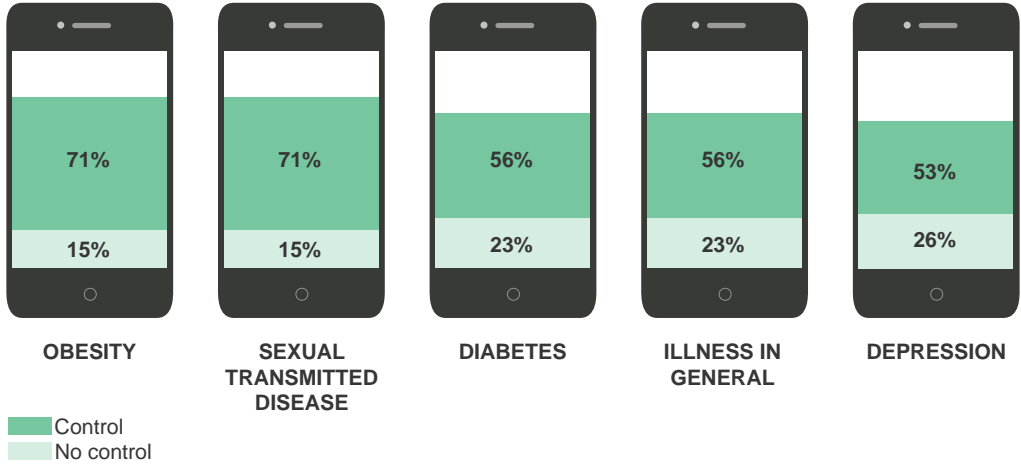
Yet when it comes to Healthcare, the majority of resources are invested in treating the sick and less focus is on keeping “the healthy” healthy. One reason is the shortage of economic initiatives for delivering preventative “Wellcare”, and an entrenched “Sickcare” business model based on the provision of medicine and medical devices in hospital and clinic settings. However, looking ahead with 85+ as the fastest growing age group, it is clear that Sickcare is unsustainable.

Patients want to take control of their own health

Source: 2

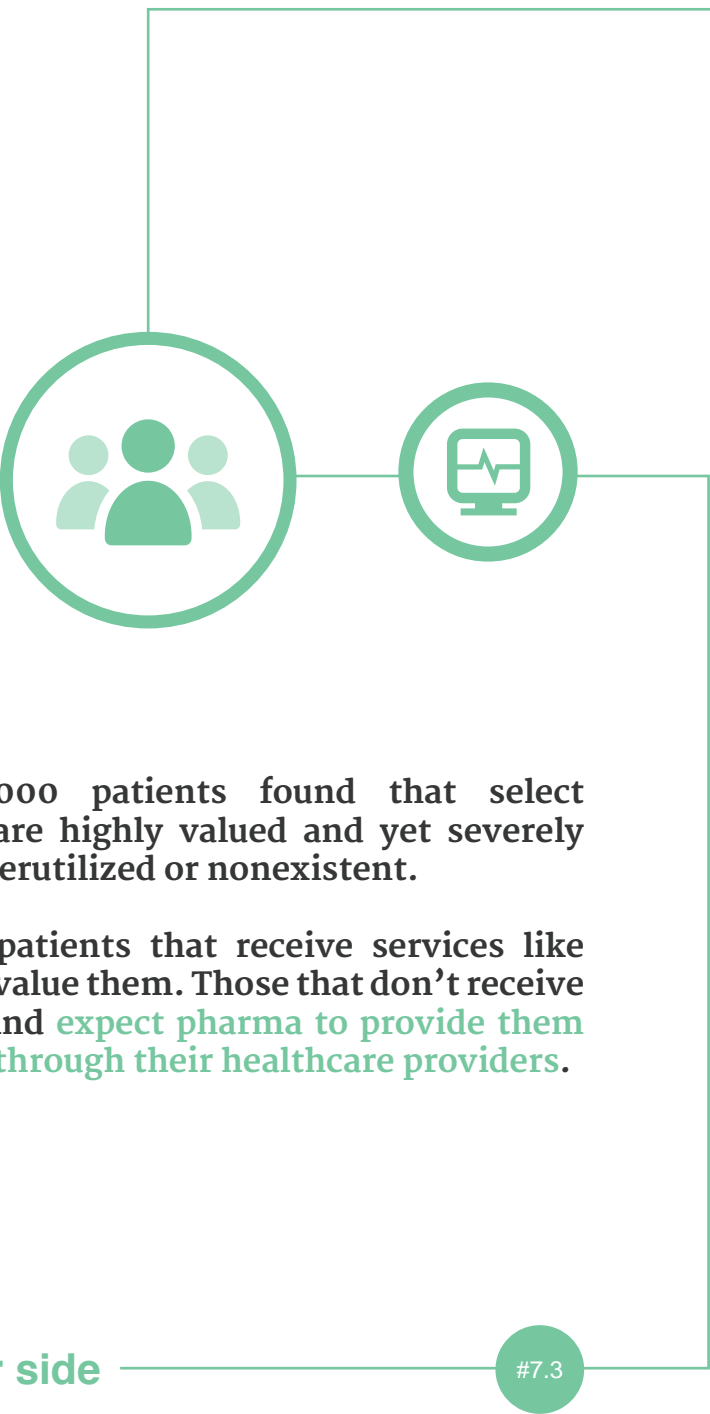
#7.2

52 percent of global respondents believe obesity is not a disease but, rather, is caused by lack of willpower and self-control.



It’s worth noting that although the consensus of the medical community would be that individuals have little or no control over whether they contract a number of specific diseases and disorders - e.g., schizophrenia, blood cancer - significant minorities in our study believe otherwise. Remarkably, roughly as many respondents think they have some measure of control over depression (53 percent) as they do over diabetes (56 percent) or heart disease (52 percent). This

latter finding would seem to suggest a fundamental misunderstanding of depression, or may be indicative of people lumping the “blues” with more serious, clinical forms of depression. The general perception of Alzheimer’s and other degenerative diseases as being totally outside one’s control suggests there is scope for further education regarding the benefits of regular exercise and mental stimulation as we age.

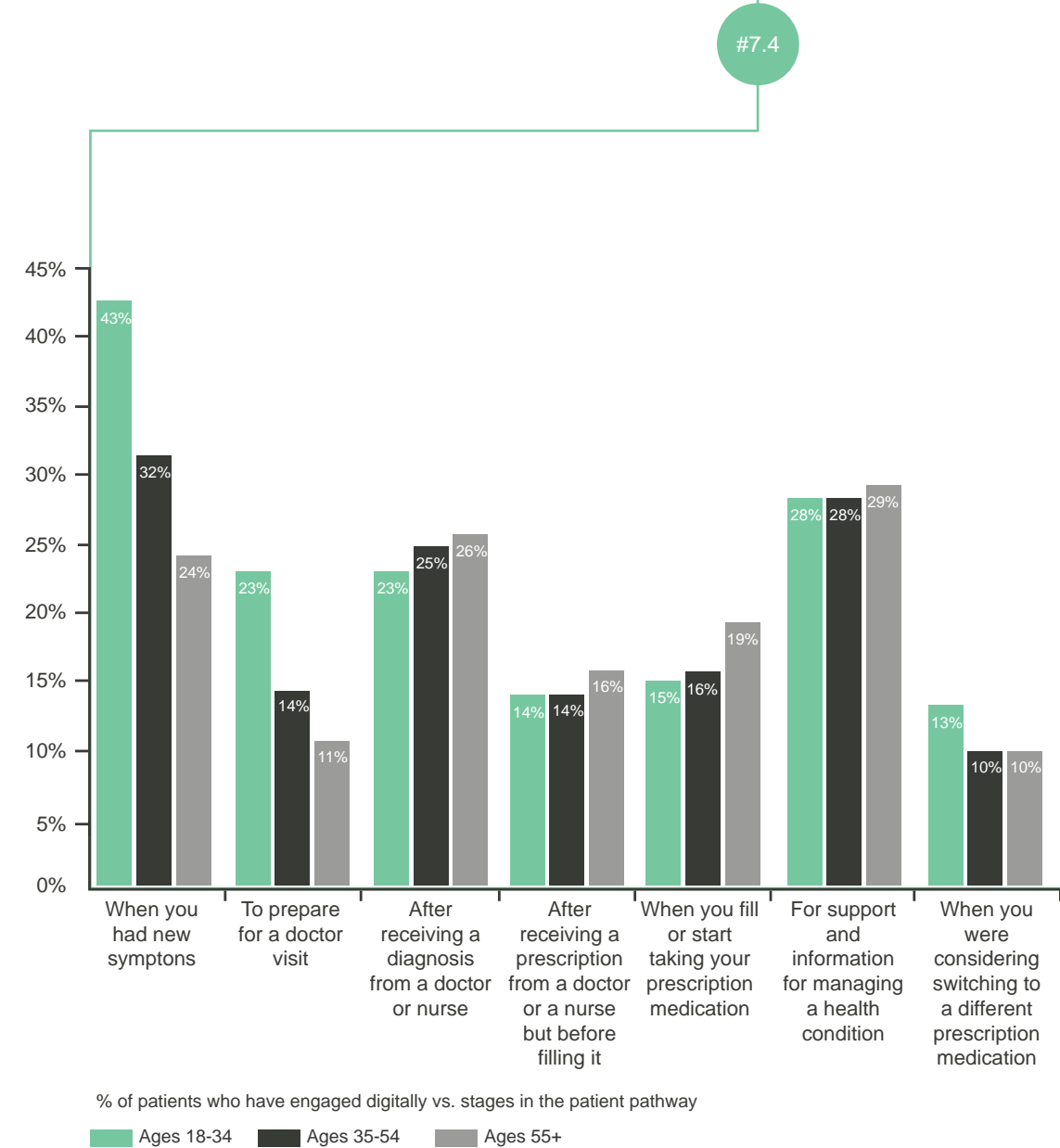


With pharma on their side

Source: 6

Across the patient pathway and all age groups

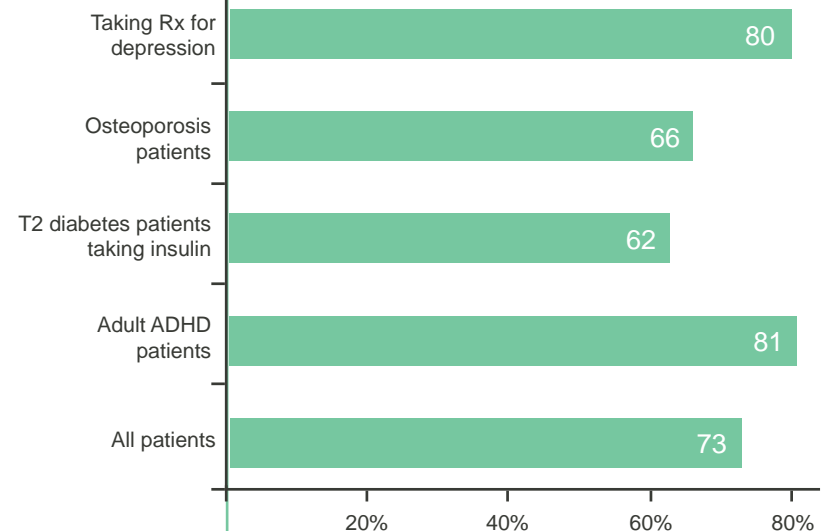
Source: 79



#7.5

Across conditions

Source: 79

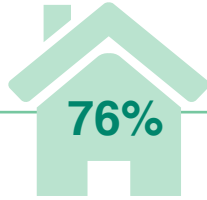


60% + across conditions are online for health

#7.6

And they are willing to commit and “trade-up”

Source: 6



76%

76% of patients think pharmaceutical companies have a responsibility to provide information and services that help patients manage their own health.



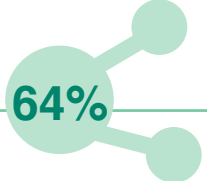
74%

74% indicate that the most appropriate time to initiate outreach is when they start taking a medication, although half of the respondents are open to receiving assistance after they have begun a course of treatment or are considering switching.



72%

72% is the average satisfaction rate with the top five most important services. Satisfaction rates are high across the board with 80% satisfaction for product information as the top scorer.



64%

64% of patients are willing to provide information on their health in order to receive free information and / or services from pharmaceutical companies.

#7.7

Patients say that pharma sponsored social media motivates

Source: 52

PoL Focus Group:
“Do you feel that social media resources sponsored or created by pharma can motivate patients to discuss Rx products with their doctors?”

72%

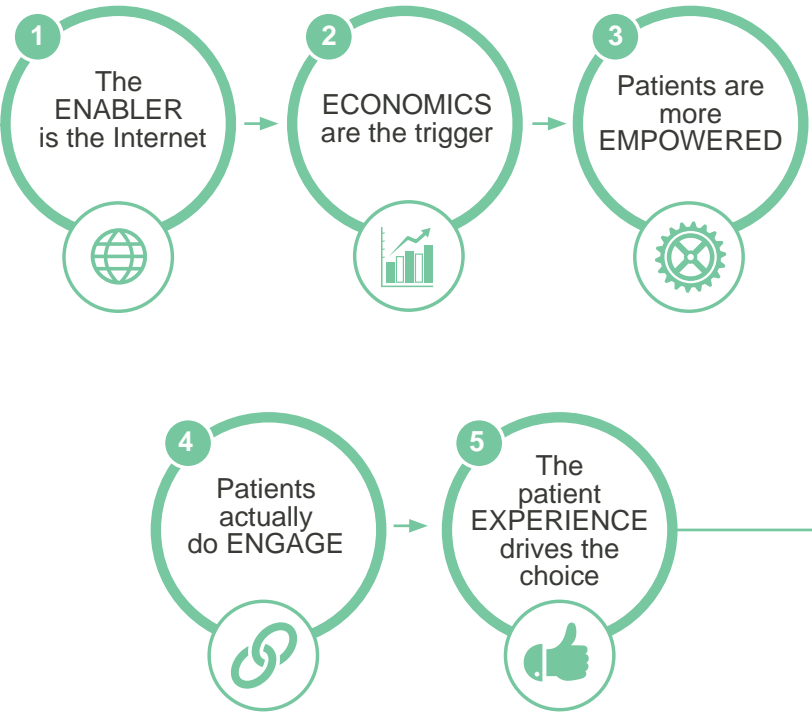
said yes.

Patient influencer's top 10 tips for pharma social media

- 1) **Actively collaborate with patients:** Even pharma-sponsored communities should have patients moderating, managing, and actively contributing content.
- 2) **Avoid hip & trendy:** Health is serious business—being hip or trendy with your communication can send the wrong message about a company's understanding of the impact a disease has on a patient's life.
- 3) **Embody transparency:** Transparency doesn't mean including your logo in a 6-point font at the bottom of the “About” section of your website.
- 4) **Find balance between public and private sharing:** If you want to encourage meaningful interactions among members of the community, then offer the opportunity for people to share information privately.
- 5) **Shape strategy around patient needs:** Active and influential patients should be involved in the planning and strategy of communities because they have an intimate understanding of the community's needs.
- 6) **Allow anonymity:** Some people just aren't comfortable broadcasting their health status to the world (especially in delicate conditions like HIV or diabetes). Allowing anonymity removes barriers for engagement.

- 7) **Target your audience:** Are the people you are communicating with technology savvy? Where are they in their disease journey? What is their level of health literacy? With syndicated studies from Pew Internet and Manhattan Research, or platforms like Verilogue and Truvio, there is no longer an excuse for not knowing your audience.
- 8) **Appoint experienced owners:** While pharma's social media “rock stars” may know how to effectively use the best tech tools available, those involved in the development and management of disease-related communities should also have a deep understanding of the disease and products.
- 9) **Enable content discovery:** Quality health content is already hard enough to find, and while social media can be good for engagement and sharing, it tends to fall short in the area of “discovery” and “search.” Create ways that make it easy for people to find content you have posted.
- 10) **Reference information:** Although the practice of referencing content sources is a requirement for almost all pharma communications, it appears that it's a less common practice when it comes to pharma's social media initiatives.

The reality of the 5 Es: If you are not chosen as provider, you are out



#7.8

So what is really happening with patients?

Source: 67



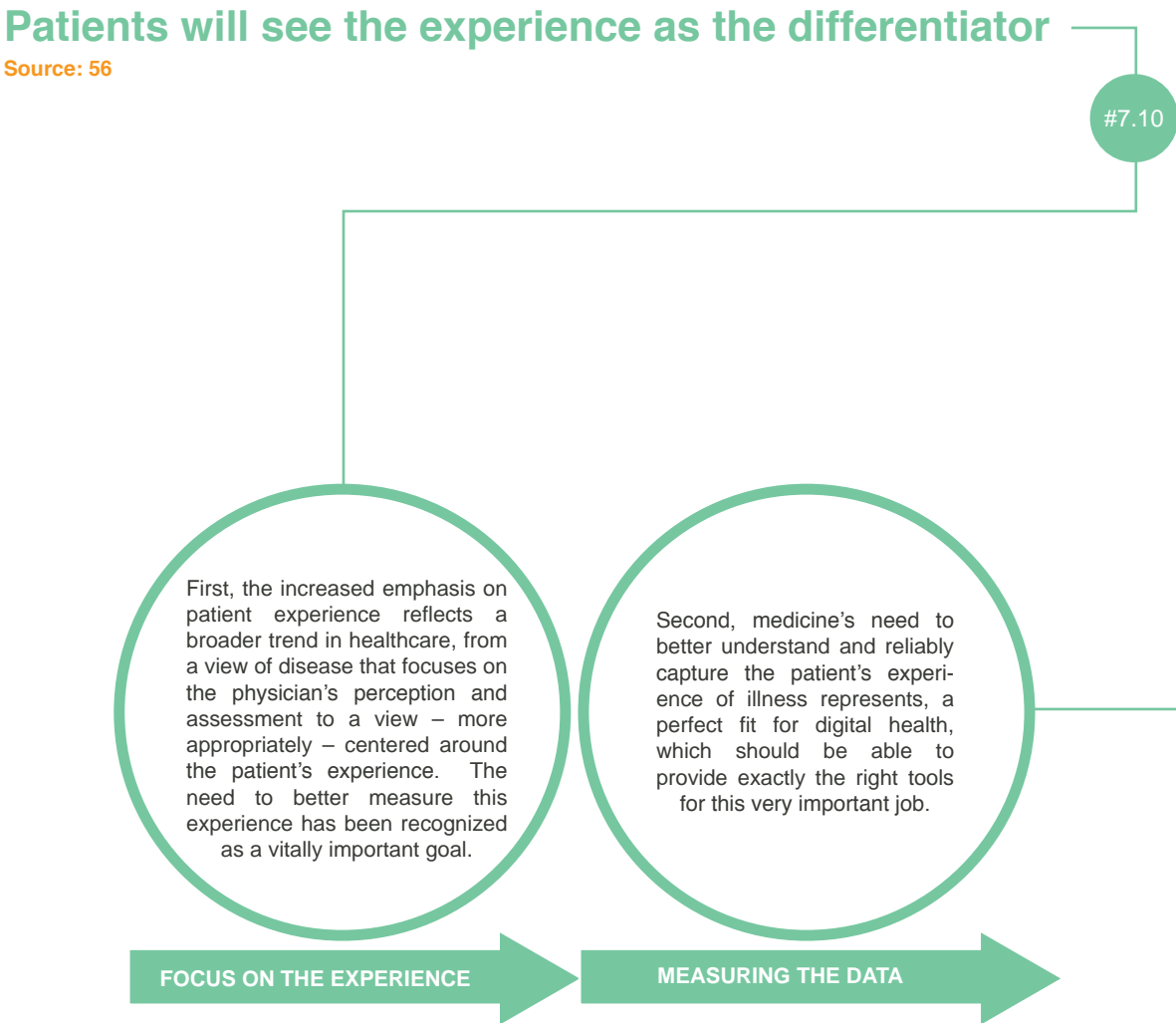
Patients want and expect more services from pharmaceutical companies to help them learn about their conditions and therapies, and better manage their health. The healthcare marketplace provides significant opportunities for pharmaceutical companies to do so.

All pharmaceutical companies need to take a close look at their current portfolio and identify where patient services could benefit patients and the business, as well as support provider, retailer, payer and patient goals. However, some specialty drugs such as oncologics or lifestyle drugs such as obesity and smoking cessation, for example—may be even better suited for patient services.

The ability to provide accessible, useful patient services will help pharmaceutical companies elevate their value

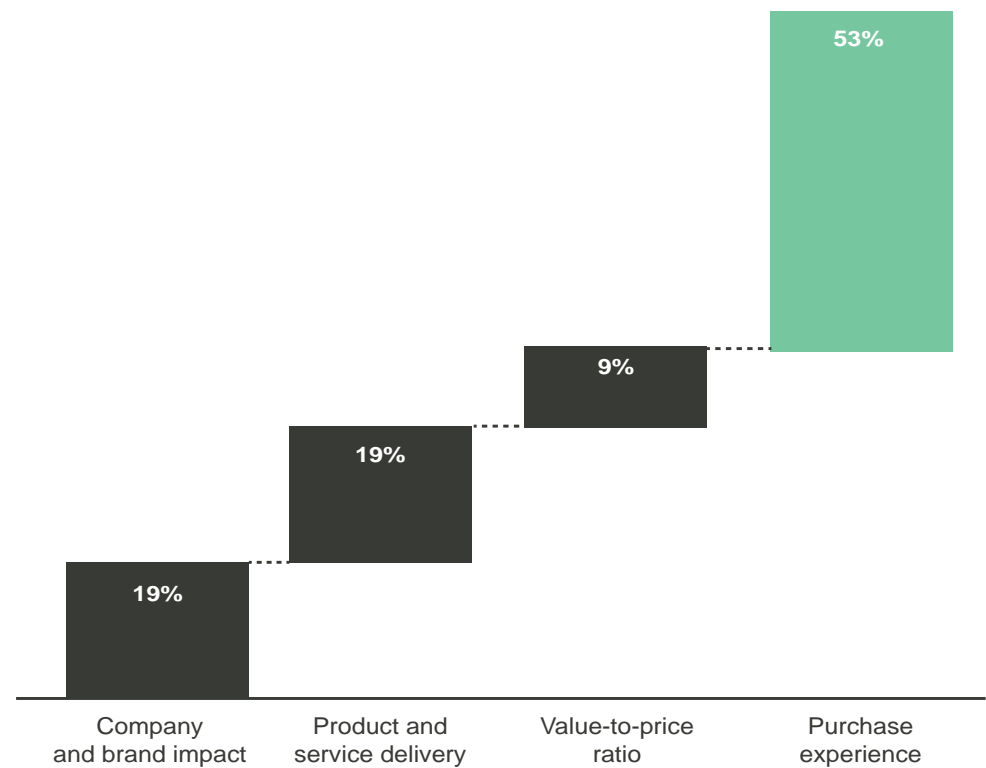
across the healthcare ecosystem—improving health outcomes for patients, and partnering with other health-ecosystem constituents to achieve improved patient outcomes.

To date, most pharmaceutical companies’ digital health solutions have strived to reach the broadest segment of patients and physicians at the lowest cost. This approach often results in a “one size fits nobody” solution, with features and functionality not targeted to specific patient and physician populations. In a world of Google Maps and Instagram and Pandora, consumers expect more. A design that has the specific patient and physician target segment in mind is much more likely to result in adoption and market traction.



In many cases, the key points of differentiation between therapeutics are not differences in so-called “hard” endpoints, but rather the way the drugs make the patients feel during (and after) treatment. The need for improved patient-associated measurements is also a key reason medical product companies should care

a lot more about digital health than they seem to do. Most future drugs are likely to represent incremental improvements, and it will be essential to understand, and have credible data around the often very important benefits a new product delivers to patients.



What customers want from the purchase experience:

- Offers unique, valuable perspectives on the economics associated with healthcare administration.
- Teaches me about new issues that impact my market
- Helps me navigate alternatives
- Helps me avoid potential mistakes and significant risks
- Easy to buy from
- Wide spread

Drivers of customer loyalty to identify supplier differentiation

#7.11

And make “make me smarter” purchases

Source: 68

Patients will emerge as “good patients” and “citizen scientists”

#7.12

Source: 27, 45



Today, what it means to be a “good patient” has changed drastically from 20— even 10—years ago. The empowered patient is today’s patient. The dialogue between doctor and patient is a 2-way conversation in which the patient is more prepared than ever to take an active role in treatment choices. Today’s “good patient” tackles their next doctor’s appointment with all kinds of questions and even some suggestions to help arrive at a treatment plan. This patient sees their healthcare as being in their own hands. To be sure, the doctor is still expected to occupy the role of expert. But this credential must be earned, proven even. Our patient of the 21st century is now accountable for their own health and an advocate for it. Of course this has not been a complete transformation, but it is the direction

healthcare is heading. Fast. And we don’t have to think very hard about what’s driving this change.

Patients and caregivers will play an important role in the evolution of healthcare and digital health. The emergence of “citizen scientists” who are empowered by increasingly focused and filtered information will act – alone and with like-minded people – to take greater control of care. Self-advocacy will change ‘population-based’ treatment guidelines to more personalized care. And the pandering “ask your doctor” headlines of DTC advertisements will shift to data-based claims that empower the patient and make a much stronger and direct link between the Pharmaceutical Industry and the true end-user, not the physician.

#7.13

Embracing the promise of big data

Source: 10

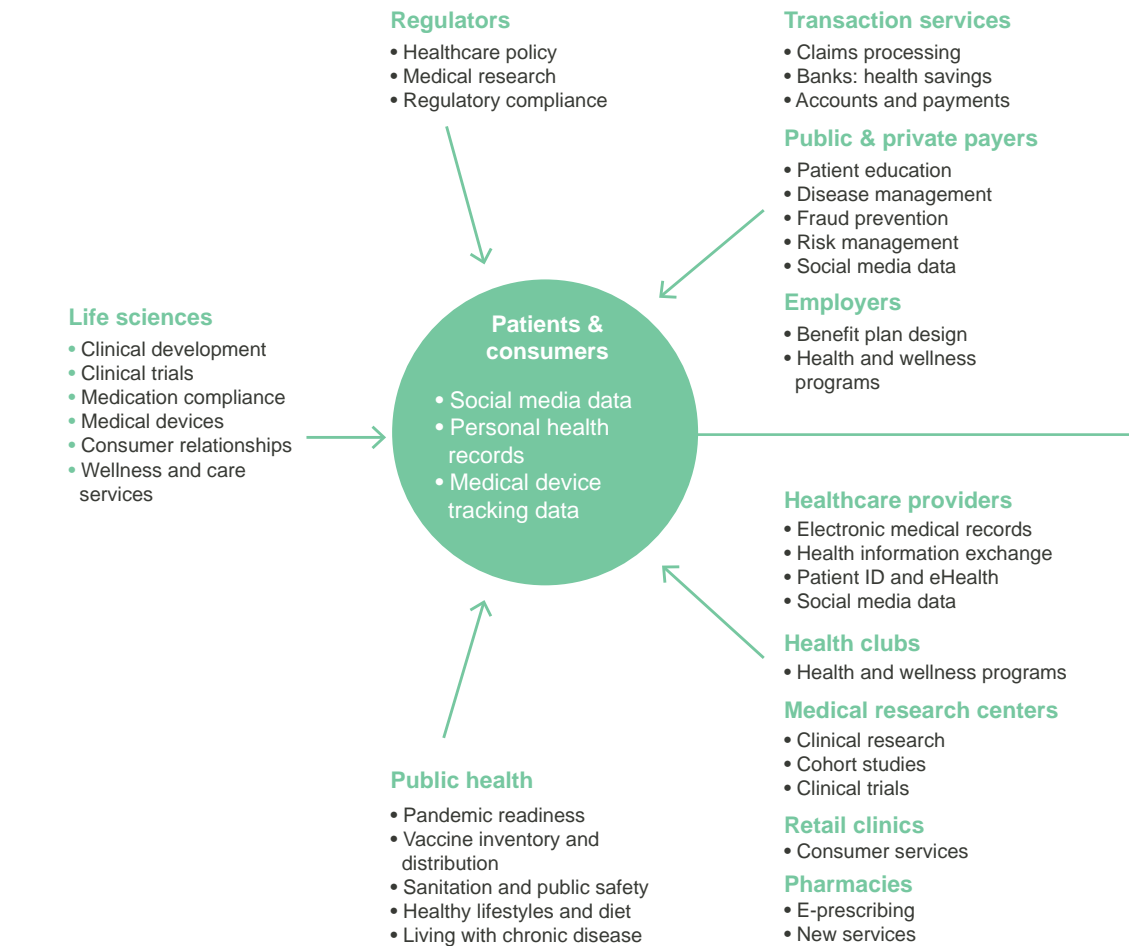
	Patient	Provider	Payer	Life Science Organization	Other Stakeholders
Personalized / Holistic Care	●	●	●	●	●
Reduced time to provide the right treatment	●	●	●	●	●
Matching the patient with the most appropriate physician, enabling the best possible care	●	●	●	●	●
Remote monitoring and medical homes enable more efficient condition management with fewer hospitalizations	●	●	●	●	●
Enhanced patient safety and care quality, greater operational and minimal clinical claims fraud	●	●	●		●
Mapping disease trajectory and prognosis, enabling more enhanced timely care	●	●	●		●
Patient segmentation that enables choosing the most appropriate medication for each patient	●	●	●	●	●
Identify better product candidates and facilitate fast, cost-efficient development of new drugs, medical devices and diagnostics	●		●	●	●
Better match patients with clinical trials and track real-time performance for faster regulatory approvals	●			●	●
Population health management without losing sight of each individual patient and his or her needs	●	●	●		●

Potential benefits from using analytics across the healthcare ecosystem

And the challenge of data interoperability

Source: 10, 23

#7.14



The promise of “digital health” to radically alter patient life continues to capture global imagination, engineering innovation and media headlines - daily. But there’s a big missing link to all the rosy (sometimes breathtaking) forecasts and it’s called “data interoperability.” Simply put, it’s the lack of standards and formats for health data that’s captured electronically to work seamlessly within the life of a patient with a chronic condition (many of which are life-threatening).

So what does a vision for the future of the analytics-enabled healthcare ecosystem look like? Going forward, the ability to access and derive meaningful insights from the wealth of information available will become a necessity. Gaining and sharing insights from data across the entire healthcare ecosystem will be required to correlate cost and quality of care, as well as apply findings back into business processes that can inform action and change behavior. Patients can benefit from more individualized care. Insights from analytics can facilitate continuous learning and promote quality improvement.



Achieving long-term, sustainable growth starts with meeting patient expectations

#8

Relating to each patient as an individual may seem far-fetched to many pharma companies today, but innovations in digital health make such one-on-one engagement possible. Social and digital efforts must meet three primary criteria: identify segment-specific needs, provide real benefits, and be designed to actively engage the individual.²⁰

The next generation of patient support programs will shift away from soft marketing efforts to services that involve analytics and metrics, empowering patients to manage their own care and adherence, while also building loyalty and maximizing the lifetime value of each customer. Fifty-nine percent of online consumers expressed interest in these types of pharma-sponsored services.^{26, 41}

Effective use of digital health tactics opens up the traditional sales funnel, making it easier to engage more patients higher in the process – at the awareness and consideration phases – and using that influence to drive choice and build competitive advantages.

A comprehensive patient engagement platform (PEP) provides a systematic approach that supports “triple aim” business objectives: improved patient care experience, better clinical outcomes, lower total cost of care. A PEP provides value to patients, HCPs and payers by leveraging “smart” devices (e.g., wireless blood pressure monitor, activity and sleep wristbands), patient tools (e.g., behavior modification tools, physician guidance) and physician tools (e.g., EMR, clinical decision tools), and integrating these elements with communities of interest, personalized content, customer insights, and analytics from payers and respected third party sources.⁷

Mapping the expected patient experience allows pharma to understand the drivers of that experience and design a PEP to meet or exceed those expectations. Those firms viewed as trusted providers of information and resources to patients who have started on the digital journey to better health – companies that actively engage with patients online – will be rewarded with patient loyalty. Effective PEPs will satisfy internal and external patient needs, making patients feel safe, allowing them to be in control, and letting them develop a sense of trust in the relevance and value of the engagement.

Patient engagement is the only way to secure long-term profitability

Source: 91

#8.1

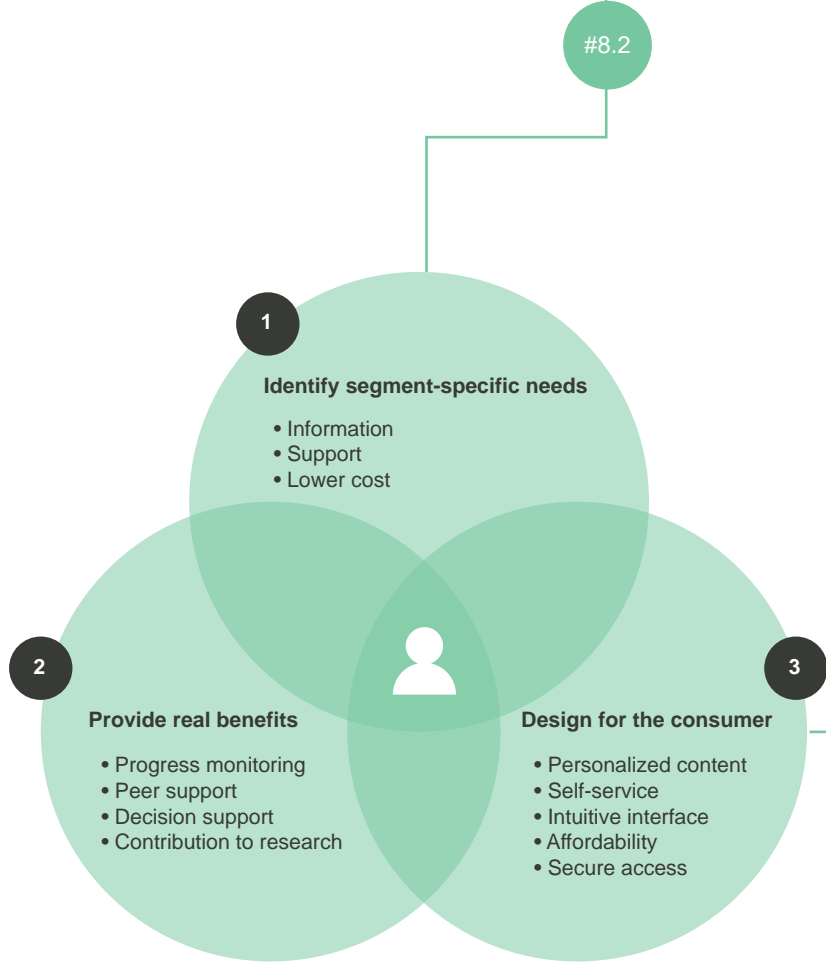
“The company goes back to a saying from our modern founder, George W. Merck, who said **medicine is for the people, not for the profits**. And the more we remembered that, the better the profits have been. So it’s important for us not only to discover and develop innovative medicines, but also to make sure that people have access to those medicines. But I have to say we take the long view, and that is, whatever’s best for patients in the long-term is best for our business.”

Kenneth Frazier
CEO Merck

Covering all key dimensions for individual engagement of patients

Source: 20

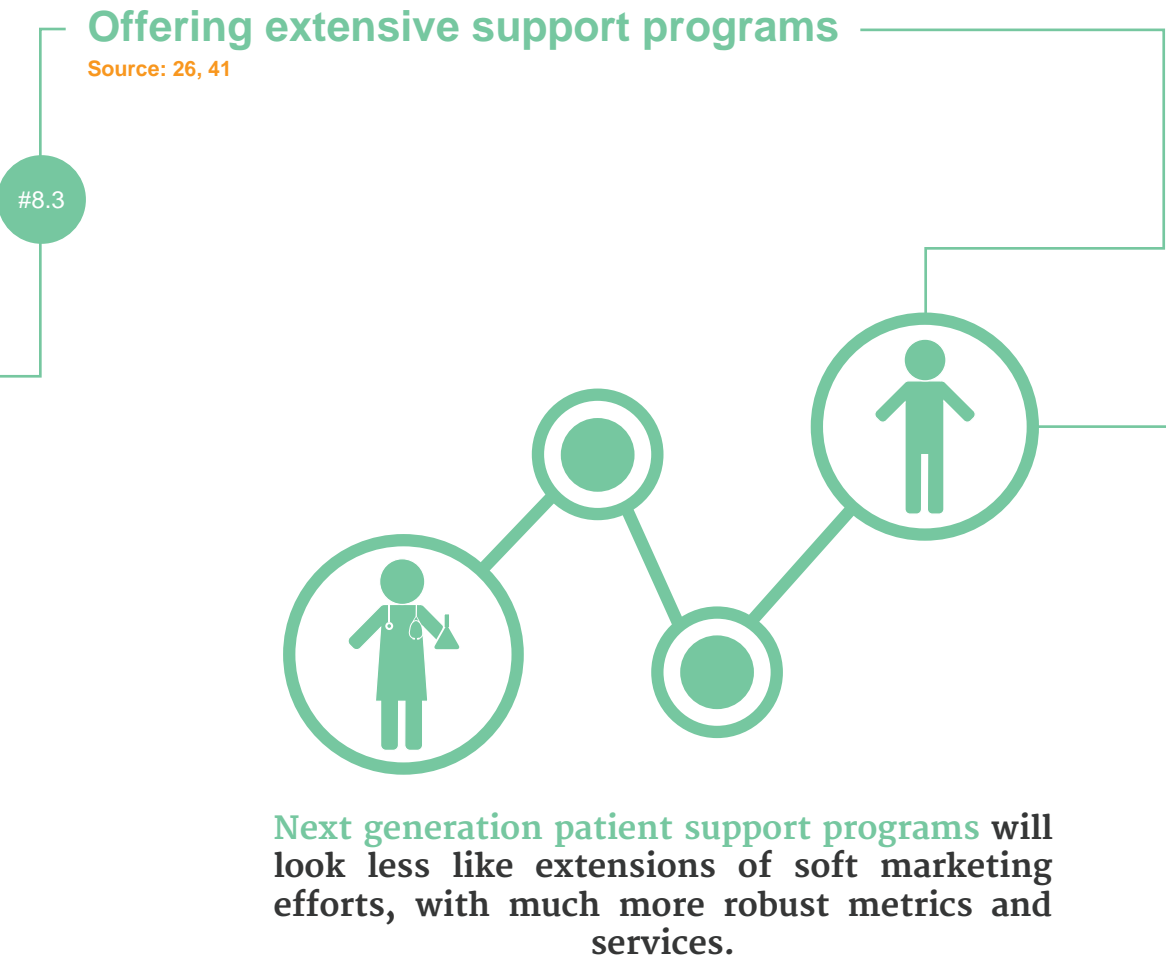
#8.2



Individual Engagement in Health

Individual patients increasingly want to participate more fully in decisions related to their own health and wellbeing. Digital innovations facilitating this engagement not only help to reduce pressure on healthcare systems, by providing an additional means

of access to care, but some also drive improvements in healthcare quality. To engage patients, digital and social-media suppliers must meet their needs as consumers across three dimensions.



Digital offers the opportunity for pharmaceutical companies to reclaim some ownership of the patient relationship through direct digital communication. And with more and more standardized pharmacological products, it is a chance for pharmaceutical companies to create loyalty that transcends specific product attributes. Digital patient support programs embody this tendency and feature the additional benefit of allowing pharmaceutical companies to show payers a more holistic approach to treatments alongside providing data on patient reported outcomes.

Pharma will build out more robust patient support offerings - many with a digital core - as marketers

seek to maximize the lifetime value of each customer and drive better outcomes. There's plenty of patient demand for these services - 59 percent of online consumers express interest in solutions or support from pharma companies

These next generation programs and services will have adherence at their heart but will feature a richer mix of condition management services such as nurse support, peer mentoring and fitness and nutrition plans. They will look less like extensions of soft marketing efforts and will increasingly be backstopped by metrics demonstrating benefits to patients, providers and payers.



Marketing funnel

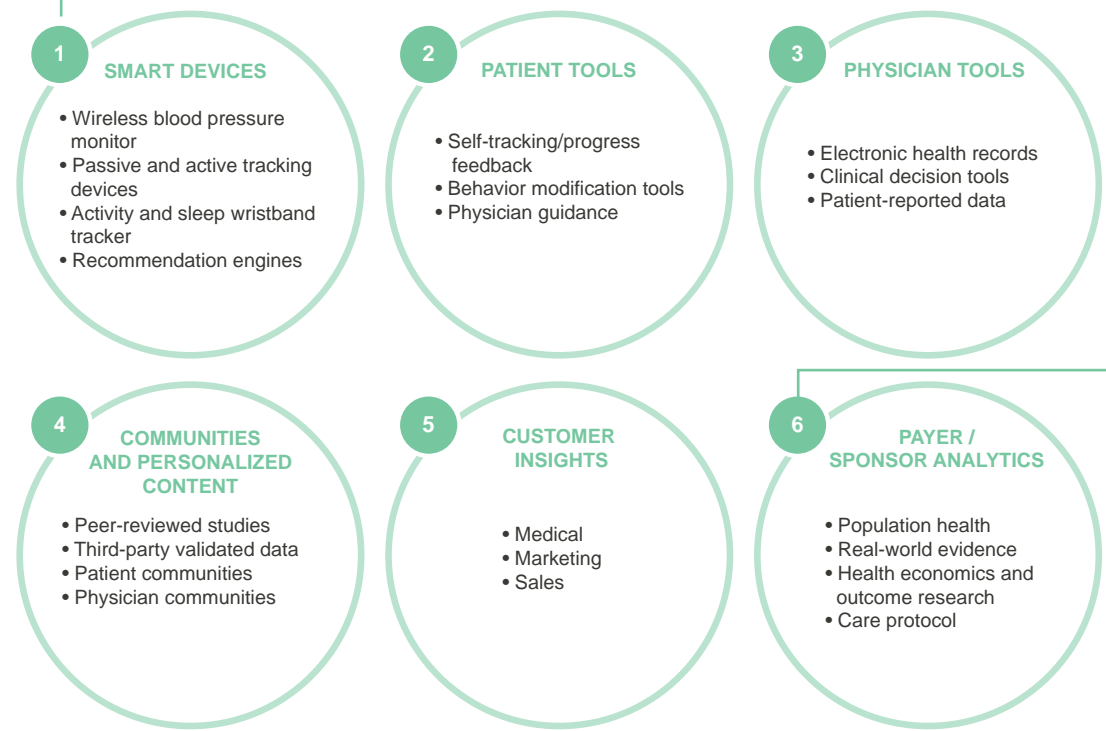
In the new digital paradigm, the marketing funnel is starting to “open up”. More opportunities exist for dialogue, interaction and engagement throughout the marketing and sales process, even at the stages

of awareness and consideration. Embracing this new engagement paradigm will allow companies to more effectively influence consumer choice and will lead to significant competitive advantages.

#8.5

Pharma must integrate into the new healthcare environment

Source: 7



A patient engagement platform (PEP) takes a systems approach to help drive patient engagement and activation to align with the tenets of the “triple aim” framework: improved care experience for patients,

better clinical outcomes, and lower total cost of care. A holistic PEP would provide value to the three key health stakeholders (patients, providers, and payers) through the above six components.

THEIR STORY

They are already telling you their stories



Life moments +
Loved-one connections =
Patients motivated to take better
care of health



Trigger:
Need for trusted
information and
advice on medical
condition and
available treatments

THEIR “DIGITAL” BEHAVIOR

They are already showing you what they do



You are not their first visit

1. Patients dominate health on the internet
2. Patients adopt digital faster than you
3. Patients care about their needs, not about your products
4. Patients form self-diagnosis based on own research
5. Patients connect with other patients to share patient stories
6. Patients form tribes and make their voices heard
7. You can't control what they say, what they do or where they go
8. Patients will challenge your assumptions

YES

- meeting their expectation

Loyal to you



E.P.E.

Expected Patient Experience =
Digital Opinion Leader

NO

- not meeting their expectation

Loyal to someone else

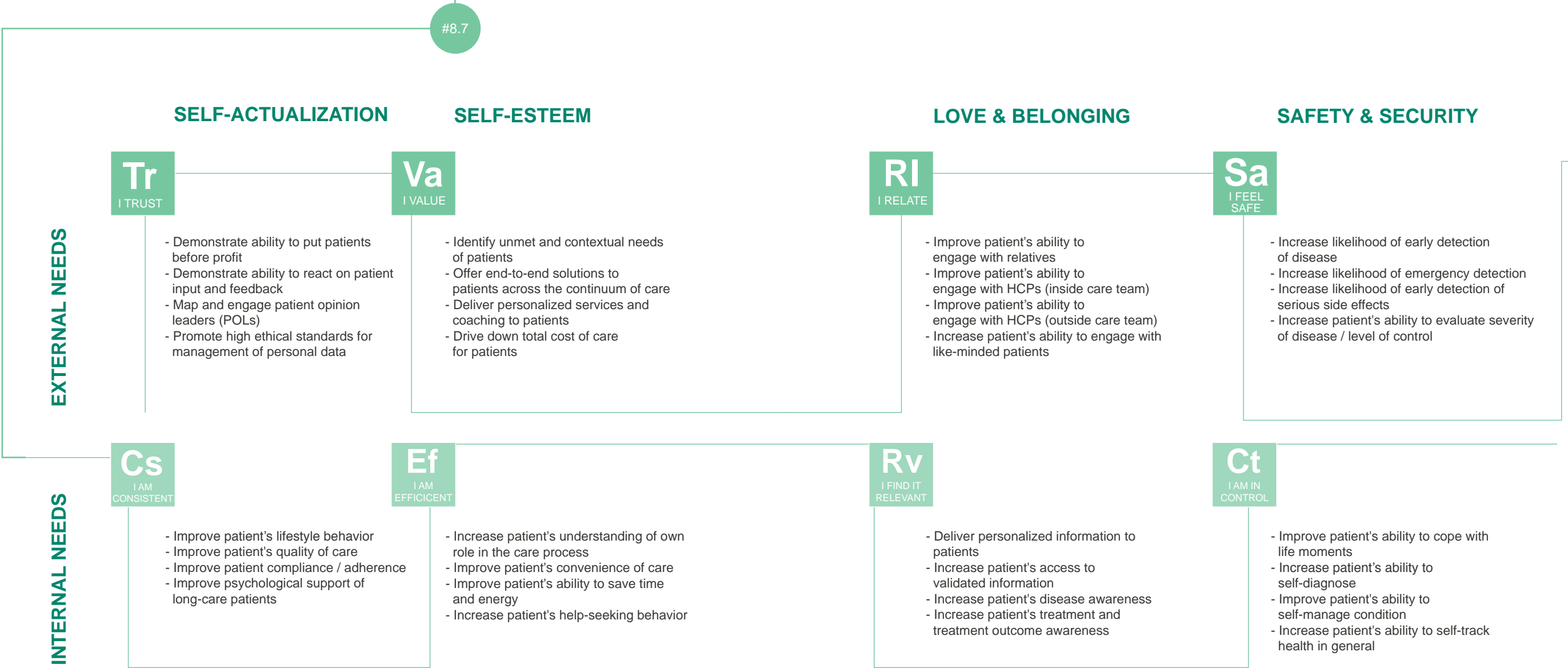
#8.6

And match or surpass the expected patient experience

Source: Valtech

To secure deep level patient engagement and to drive business growth opportunities

Source: Valtech



Supported by relevant digital interactions

Source: Valtech

#8.8

USER METRICS		TYPE OF ENGAGEMENT					
		FUNCTION		INTERACTION		EMOTIONAL	
		Control	Relevance	Efficiency	Consistency	Valued	Trust
No.	Type of user activity						
UA-1	View / visit	X					
UA-2	Submit relevance criteria	X	X				
UA-3	Search info	X	X				
UA-4	Browse products / services / solutions		X				
UA-5	Content download / read inf / watch video		X				
UA-6	Sign-up for services / subscribe to info		X	X			
UA-7	Create profile / account	X					
UA-8	Find links to relevant site / info		X				
UA-9	Contact / interact with provider		X	X			
UA-10	Smart App download / use			XX	XX		
UA-11	Post / comment / feedback		XX	XX			
UA-12	Purchase / order sample			XX		XX	
UA-13	Manage service record / follow order				XX	XX	
UA-14	Refer / mention		XX	XX	XX		
UA-15	Connect / invite			XX	XX	XX	
UA-16	Train / educate		XX	XX	XX	XX	
UA-17	Rate / review		XX			XX	
UA-18	Vote / like					XX	XX
UA-19	Suggest / recommend		XX			XX	XX
UA-20	Get influence / opinion leadership				XX	XX	XX
UA-21	Follow				XX	XX	XX
UA-22	Join tribe / support cause				XX	XX	XX
UA-23	Share personal story / experience		XX			XX	XX
UA-24	Online diary of own behavior, feelings, thoughts, etc.		XX		XX	XX	XX

Light engagement X Deep engagement XX



The majority of HCPs are now digital natives; and they expect pharma to follow

#9

HCPs are typically on the go all day – exam rooms, offices, surgery – so their time online is limited. That said, they are anxiously seeking better information on clinical studies and evidence-based medicine. In fact, 81% of physicians in the SERMO survey want higher quality pharma representatives capable of having serious discussions of “multiple therapeutic options.”³⁵

Taking the time to understand physicians’ primary needs – helping their patients be healthy, sharing knowledge with peers, making a good living, keeping themselves up-to-date on clinical and therapeutic developments – provides opportunities for pharma to facilitate these needs and help physicians accomplish their goals. Leveraging digital health as part of that mission can tap into each of those key HCP needs and open doors for pharma firms.^{18, 35}

At the same time, digital poses a “triple-threat” to the autonomy of HCPs. Patients access digital channels, particularly social media, as a primary source for disease and treatment information, subplanting the authority that used to belong to the GP. Pharmaceutical companies, while reluctant to enter the market with end-to-end direct online solutions, could cause income

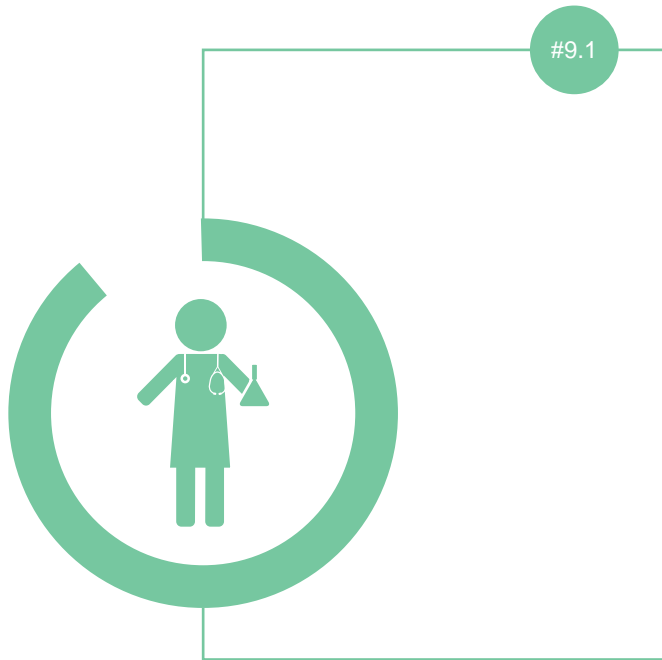
losses for doctors working outside of hospital settings by becoming direct competitors for their patients. And nurses have taken increasing roles in patient care, using digital assets, websites and apps from pharma and other sources as adherence tools and to improve their interactions with patients.^{16, 18, 26, 41}

While not as active as patients online, 2014 will present a tipping point for HCP digital engagement, with 51% becoming “digital native.” More HCPs will get medical news, reference material and textbooks, receive CME credits and visit virtual conferences online than ever before.⁷⁹ When asked what digital channels they preferred, HCPs cited a broad variety, from social media to mobile apps to independent medical websites. They also noted that pharma reps remain a key source of critical information.¹⁹ Finally, more than 80% of HCPs have a desktop/laptop computer and a smartphone, and 72% own a tablet.⁷⁹ Mobile assets are rapidly becoming components in the clinical environment.

Pharma must reach out to HCPs and provide relevant digital tools, content and communities that help them do their jobs more effectively.

HCPs expect and want evidence-based quality from pharma

Source: 35



81% of physicians stated they wanted higher quality representatives, defined as those "who are trained beyond their own product and prepared for a serious discussion of multiple therapeutic options". Physicians are hungry for clinical conversations with life sciences representatives that are based on clinical studies and evidence-based medicine.

And highly targeted messaging

Source: 92

#9.2

“HCPs are largely mobile employees, moving about from offices to exam rooms to surgery centers throughout the day. Their time online to engage in digital and social media is limited. Their participation and socialization are below that of other professionals. To break through and make a lasting impact requires compelling, relevant and highly targeted messaging.”

Jack Schember
Senior Director Cegedim

Based on a deep understanding of fundamental HCP needs

Source: 18, 35

#9.3



The overarching message of the SERMO survey is clear: Physicians are begging for practical help in getting their work done. More than ever before, they want efficient tools and communications that will help them help their patients. They want to strip away time wasters so they can educate patients, support patients who need assistance, and help patients comply and adhere to therapy. They will open their doors to life sciences companies and representatives that help them accomplish these goals.

If digital health can reduce the time physicians and other providers spend on administrative tasks, they will be clear winners. Easy access to one another's expertise and patient information can elevate the practice of medicine from an art to more of a science - and even make it more fun for the practitioners.

And how digital poses a potential triple-threat

Source: 16, 18, 26, 41

#9.4



Will the benefits of greater access to patients and more information outweigh the loss of autonomy?

Loss of authority to patients

Through the revolution in access to information facilitated by digital, GPs have lost the position as the primary channel for disease and treatment information and advice. In parallel GPs' authority is challenged as social media content is favored by search engines which represent the main access points for users searching for information online.

Loss of income

Today, pharmaceutical companies in particular are still reluctant to enter the market with end-to-end solutions.

In the current situation, they would indirectly cause income losses for doctors working outside of hospital settings and would become direct competitors for their existing customers.

Loss of authority to other HCPs

83 percent of online registered nurses said they used resources, including websites and apps, from pharma as adherence tools with patients, while 56 percent agreed that using digital resources during consultations improves their interaction with patients.

2014 is a digital tipping point, the majority of HCPs are now digital native

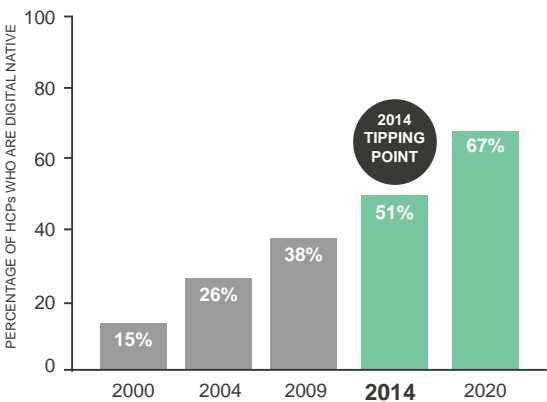
Source: 93

#9.5

+135.000
new EU students
enrolling
in medical school
each year



DOCTORS ARE CHANGING



Day-to-day sources (weekly or daily use)

	Online	Offline
News	55%	39% ¹
References and textbooks	54%	50%
Professional journals	44%	55%
Colleagues	32% ³	72% ²
Pharma or biotech sales rep		38%

Occasional sources (yearly use)

	Online	Offline
CME	89%	89%
Conferences	71%	92% ⁴

- (1) Health/medical information in the newspaper or on television
(2) In person or on phone
(3) Online professional message boards, communities, social networks, or blogs
(4) In person

Online channels are growing in popularity

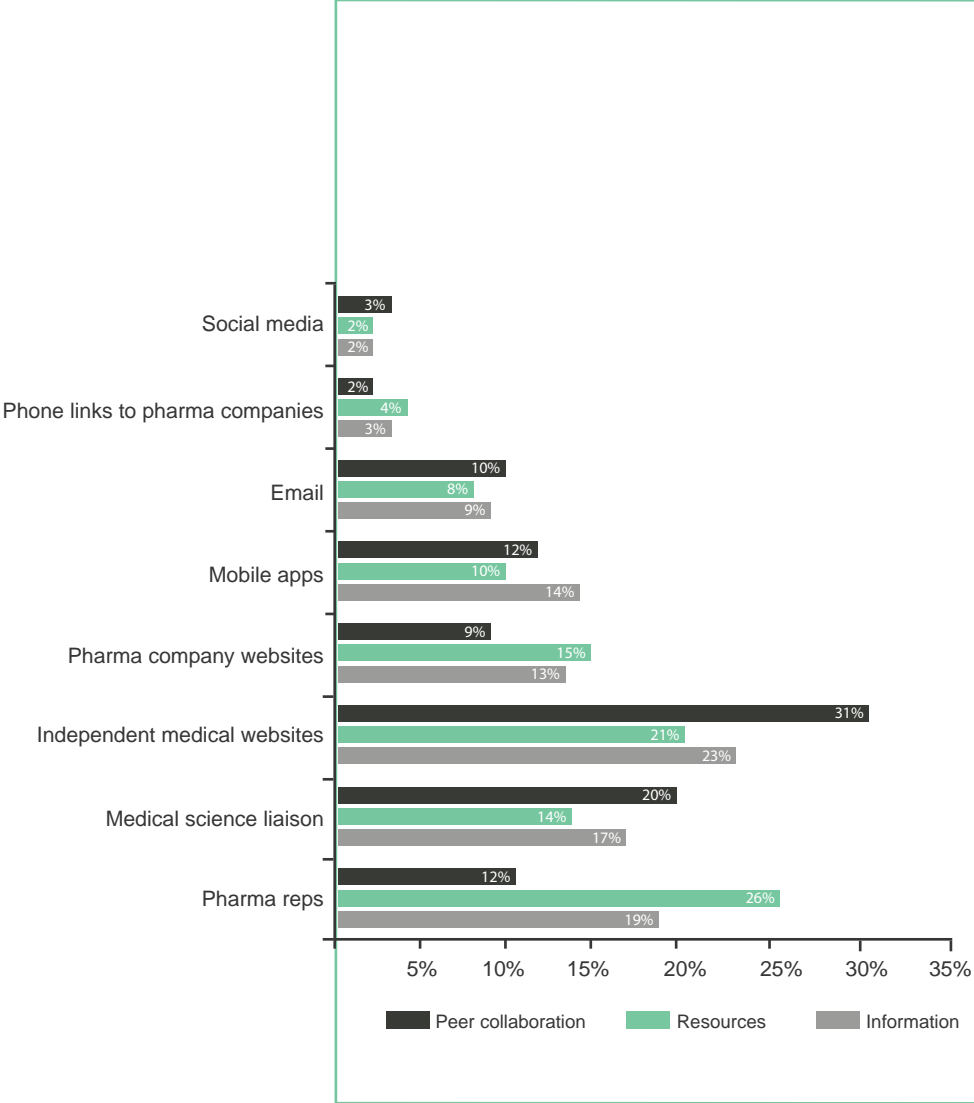
Source: 79

#9.6

#9.7

HCPs don't have a preferred channel, they have many

Source: 19



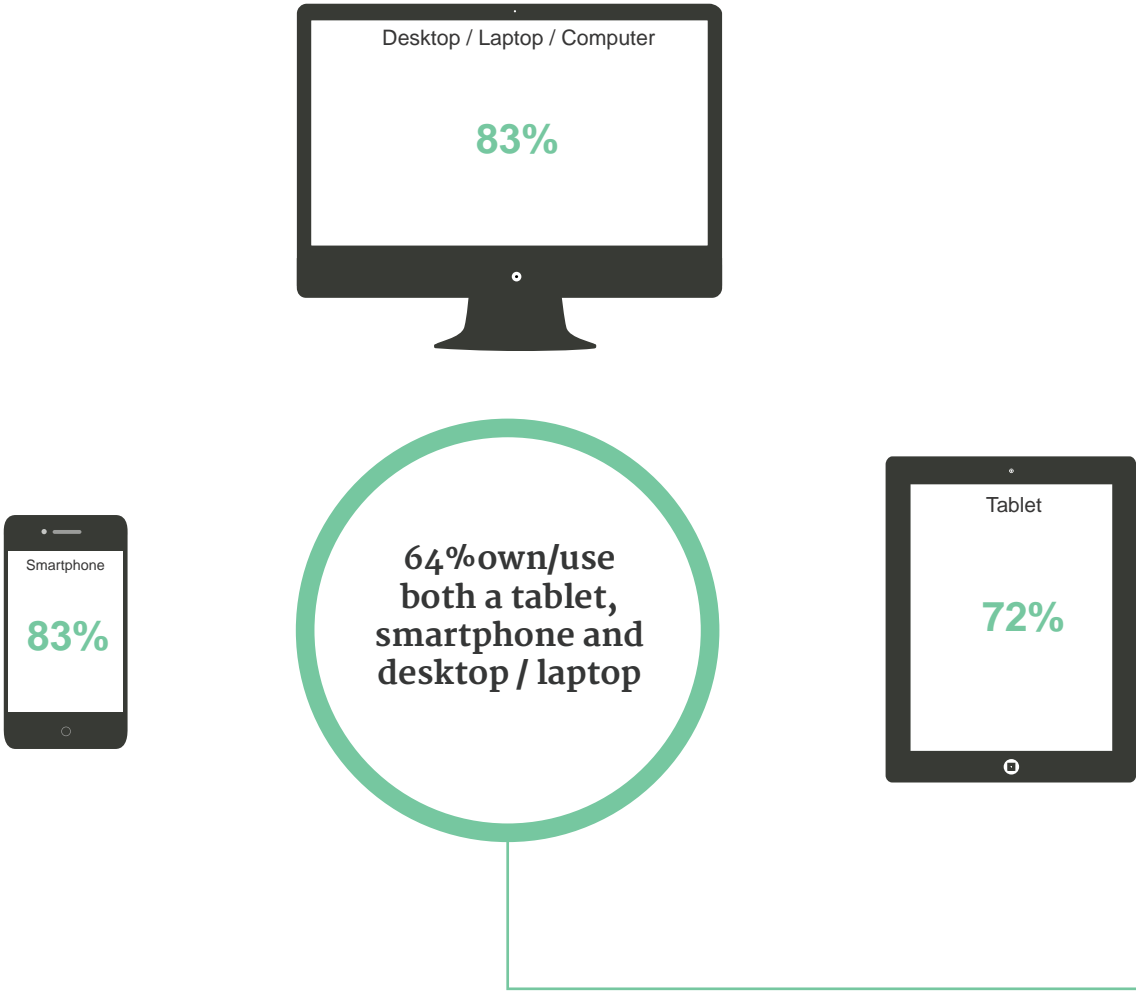
We asked physicians to rank their channel preference when performing different tasks. When searching for product information, the most popular source was independent websites, followed closely by sales representatives. HCPs looked to sales representatives first for patient education or product reimbursement information.

HCPs today regularly use a variety of sources. Less than a third of doctors name a single preferred channel. Since there is no single channel to meet the needs of every HCP, or even one HCP, a pharma company must employ a mix of channels.

#9.8

And three-device ownership is now the norm

Source: 79





#10

Pharma must deliver a seamless cross-channel experience when, where and how the HCPs want it

Many recent digital efforts by pharma have resulted in spotty ROI⁷, leading pharma execs to be somewhat reluctant to fully engage HCPs in digital channels. In addition, pharma faces a number of hurdles in implementing multi-channel digital strategies: HCPs prefer health social media sites where they engage with peers; only 7% of HCPs visit medicine sites; 81% want sites that are primarily directed to physicians; and HCPs often question the objectivity of medicine-specific information.^{78, 79, 99}

The key for pharma firms is to complement the traditional sales model with a digital platform that delivers useful and relevant information when, where and how HCPs want it. A well-executed strategy builds one-to-one relationships at scale in a cost-effective way.⁵ Reps must become part of a wider and more diverse cross-channel strategy that seeks to deliver a personalized experience to each HCP.⁵⁷

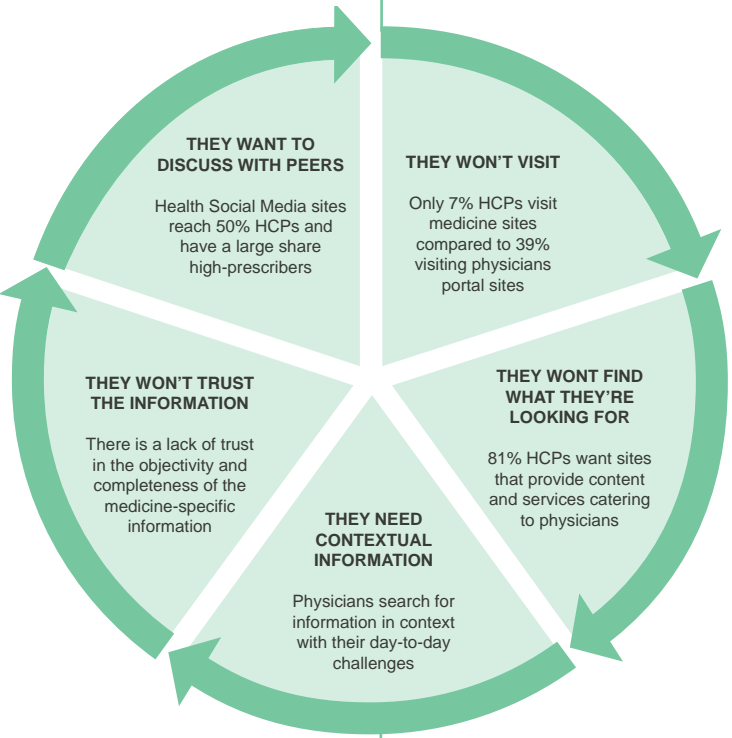
The transition from HCPs' current experience with pharma companies to a future, seamless experience requires making multiple channels available, and allowing HCPs to choose how and when they want to interact. This revised model encompasses the entire relationship, from initial contact to prescription sales and feedback.¹⁹

In order for HCPs to derive value from such a model (and, in turn, deliver positive ROI for pharma firms), HCP internal and external needs must be met. The combination of reps and digital resources must help HCPs do their jobs more effectively and efficiently while delivering superior health outcomes for their patients.

Involving HCPs in the development and monitoring of digital efforts is crucial to achieving business objectives. As a result, companies need to enable HCPs to continuously provide feedback to better understand whether or not a digital initiative delivers RoI to the company and real value to the HCP's.

The importance of online physician communities cannot be overstated. The influencers of 2014 are online, not in the conference room.^{36, 50} Mapping and understanding HCP networks using advanced software is a strategic undertaking that can identify key influencers, connections between physicians, prescribing levels for each physician, and additional critical data that can help build an effective multi-channel engagement and sales strategy.⁸⁰

When it comes to melding the traditional sales model with a targeted, multi-channel digital model, there is no such thing as having too much business intelligence.



More physicians are becoming “no see” physicians to pharma and current multi-channel efforts at most companies have resulted in a spotty return on investment.

#10.1

Top five reasons why pharma fail to acess HCPs

Source: 7, 78, 79, 99

Pharma must elevate HCP engagement to the next new level

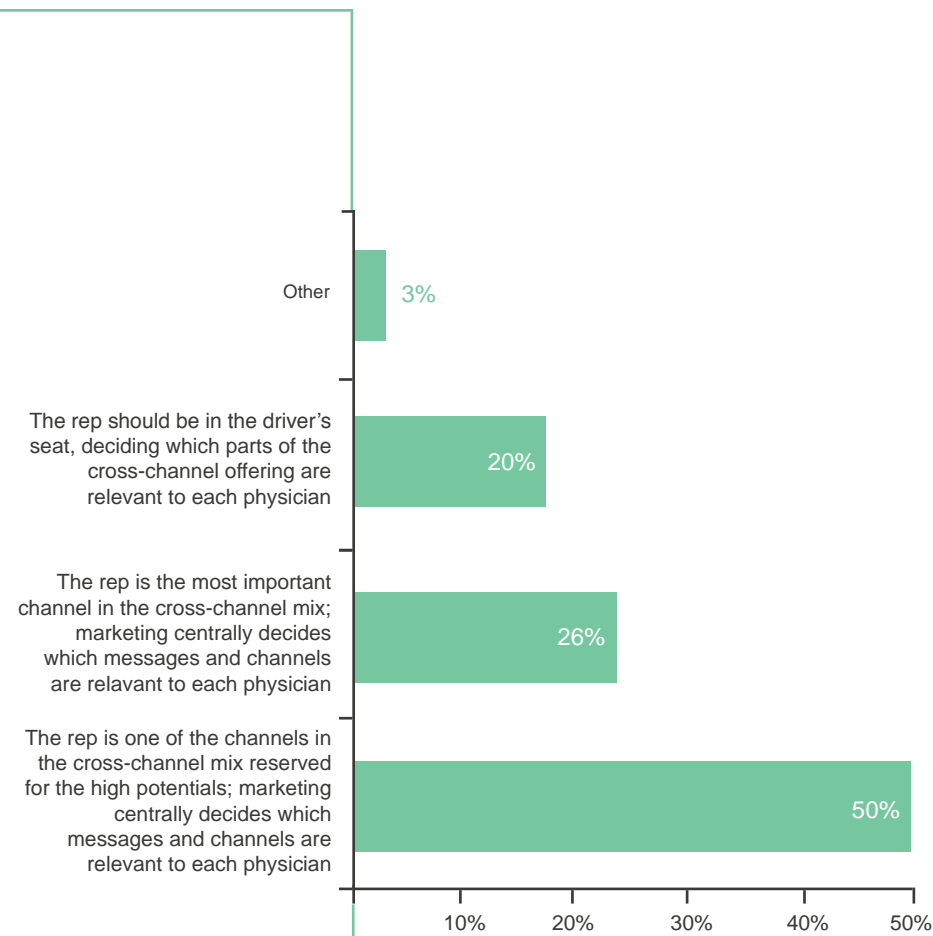
Source: 5

#10.2



Far-sighted organizations will use digital platforms to complement their traditional selling models with an integrated multichannel strategy that makes information available when, where, and how the

healthcare practitioner wants it. Companies will increasingly use technology to build relationships at scale for these physicians; that is, interact with them in a personalized and yet cost-effective way.



And the rep must become part of a wider and more diverse cross-channel strategy

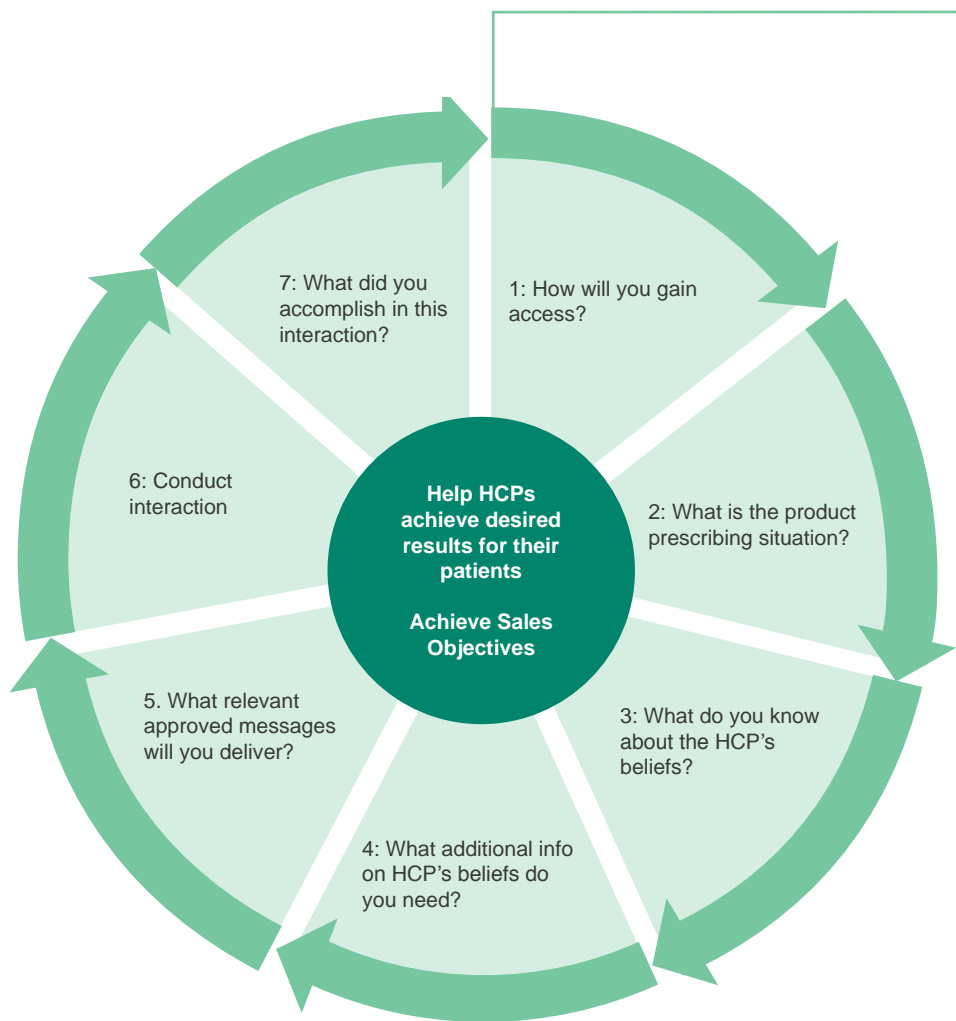
Source: 57

#10.3

Based on an updated sales model design

Source: 68

#10.4



• Design sales model to raise quality of selling interactions with HCPs, based on their beliefs and learning preferences and informed by physician communities of practice.

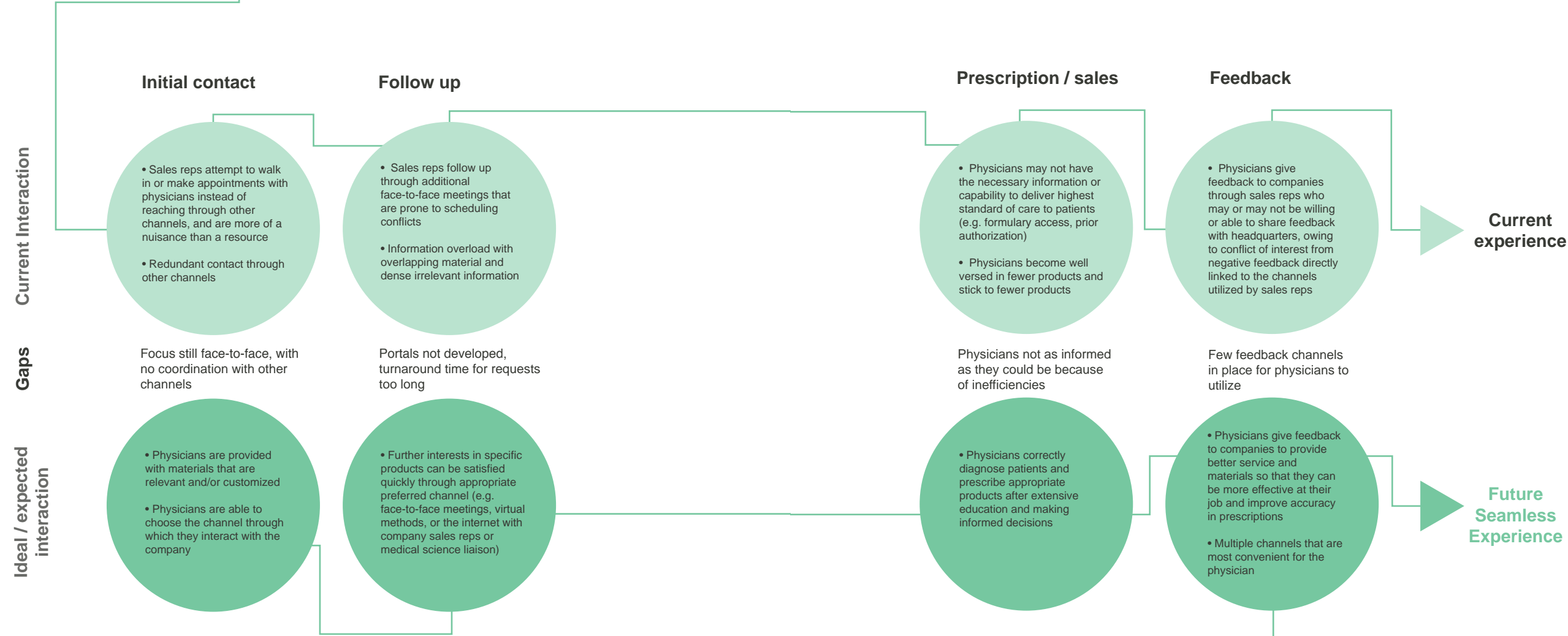
• In order to help HCPs achieve desired results for their patients while also achieving pharma's sales objectives.

• Supported by enhanced materials and programs from marketing, well designed and integrated training and HR programs and upgraded information systems and tools.

#10.5

That will deliver a seamless experience across channels

Source: 19



In this ideal future state, HCPs never have to repeat themselves to a drug company or wait very long for a relevant response. Each request they place is captured and automatically sent to the appropriate department. Their needs are then responded to as quickly as possible through the most effective and preferred channel.

To drive “true” HCP value

Source: Valtech

#10.6

EXTERNAL NEEDS

INTERNAL NEEDS

SELF-ACTUALIZATION

SELF-ESTEEM

LOVE & BELONGING

SAFETY & SECURITY

Tr
I TRUST

- Demonstrate ability to put HCPs before profit
- Demonstrate ability to react on HCP input and feedback
- Map and engage key opinion leaders (KOLs)
- Promote high ethical standards for interaction with HCPs

Va
I VALUE

- Identify unmet and contextual needs of HCPs
- Offer end-to-end solutions to HCPs across the continuum of care
- Enable HCPs to deliver personalized services / coaching to patients
- Improve HCPs ability to make a good living

RI
I RELATE

- Impact HCPs ability to engage with patients
- Improve HCPs ability to engage with relatives
- Increase HCPs ability to engage with like-minded HCPs
- Increase HCPs peer-to-peer recognition

Sa
I FEEL SAFE

- Increase likelihood of early detection of disease by HCPs
- Increase likelihood of emergency detection by HCPs
- Increase likelihood of early detection of serious side effects by HCPs
- Increase HCPs ability to evaluate severity of disease / level of control

Cs
I AM CONSISTENT

- Increase access to HCPs
- Increase scientific good-will within thought-leader community
- Identify and map prescription drivers
- Enable HCPs to improve patient's quality of care

Ef
I AM EFFICIENT

- Increase HCPs understanding of own role in the care process
- HCPs convenience of delivering care
- Improve HCPs ability to save time and energy
- Increase first-line HCPs referral ratio

Rv
I FIND IT RELEVANT

- Deliver personalized information to HCPs
- Increase HCPs access to validated information
- Increase HCPs disease awareness
- Increase HCPs treatment and treatment outcome awareness

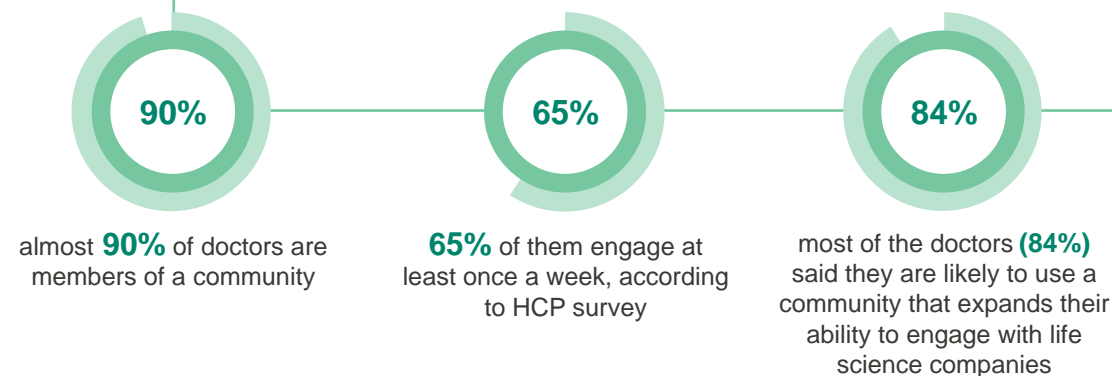
Ct
I AM IN CONTROL

- Improve HCPs ability to cope with day-to-day challenges
- Increase HCPs ability to diagnose
- Increase HCPs ability to choose right treatments
- Improve HCPs ability to monitor and support patient compliance

Pharma must upgrade its social channel engagement

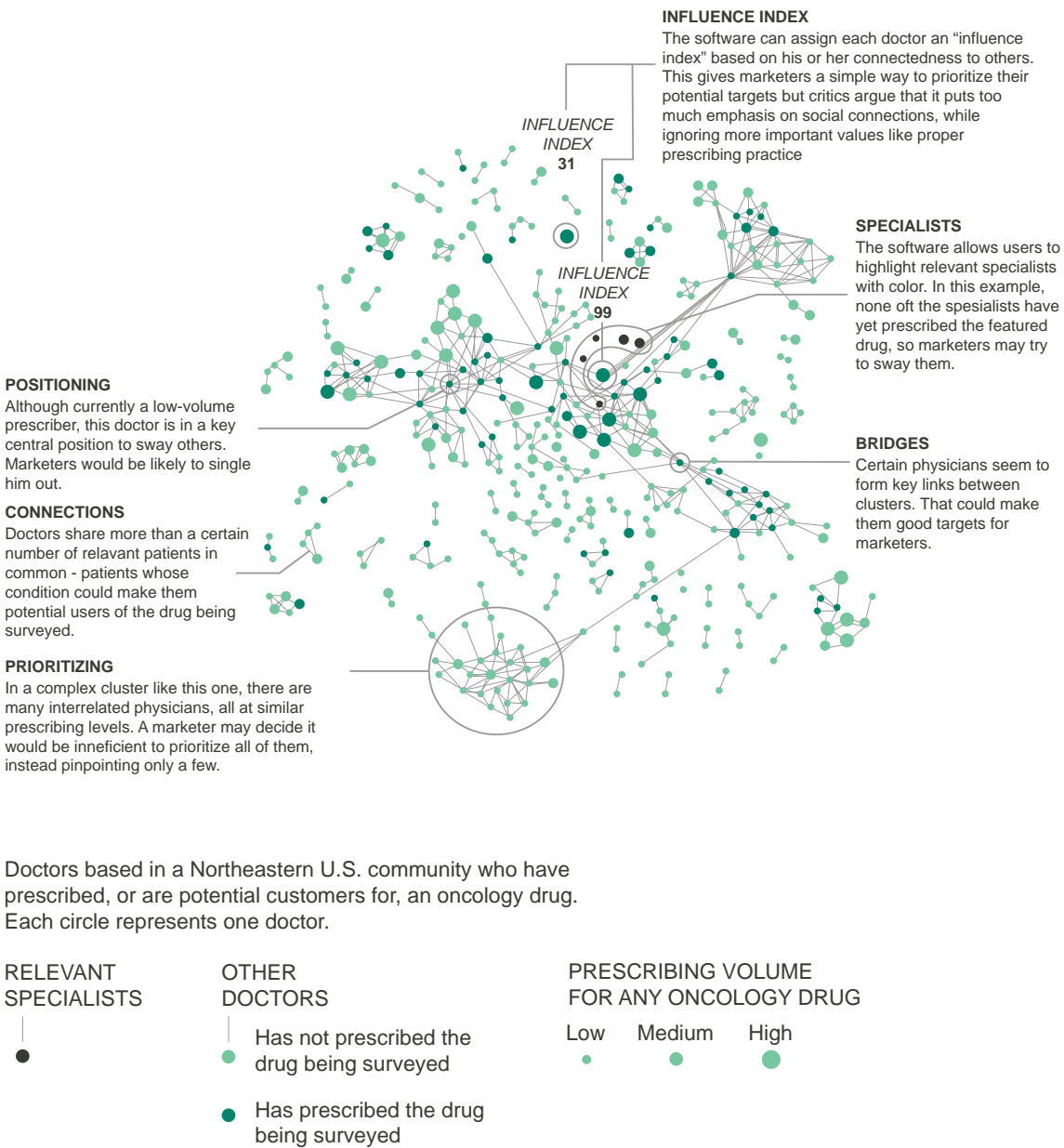
Source: 36, 50

#10.7



HCPs are active in Social Media, and they will talk about industry in this space regardless of pharma marketing presence there. Big platforms, and especially Google+ will continue to grow in 2014 at the cost of closed niche communities like Sermo or Doctors.net.uk. To be efficient Pharma marketing should listen to the conversation, and engage whenever appropriate. Influencers of 2014 are in the social web, not in the conference room.

The importance of online physician communities is undeniable, as almost 90% of doctors are members of a community and 65% of them engage at least once a week, according to HCP survey. But what's more encouraging is that most of the doctors (84%) said they are likely to use a community that expands their ability to engage with life science companies.



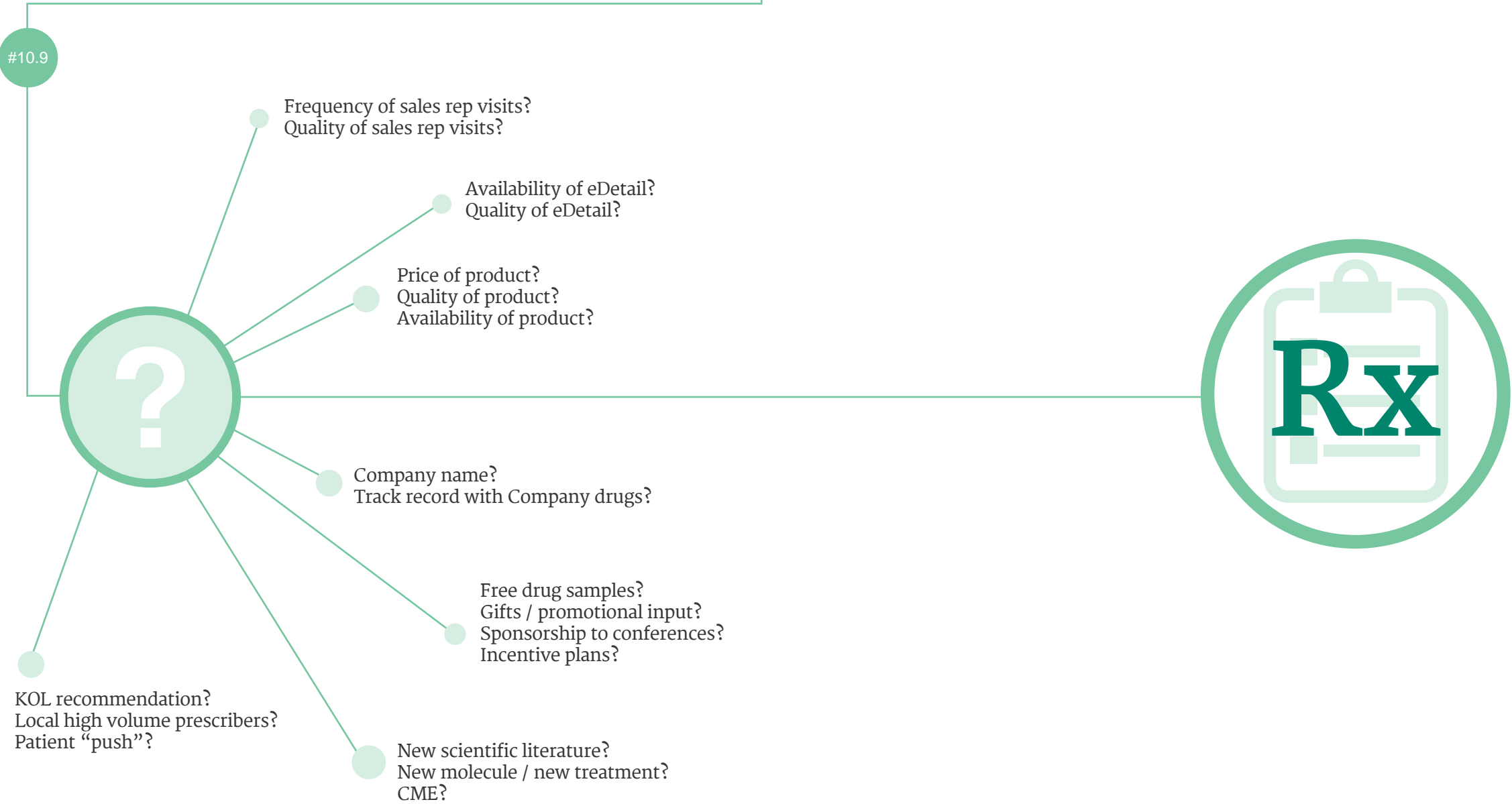
To map and understand HCP networks

Source: 80

#10.8

And intelligently forecast prescription drivers

Source: Valtech





Megatrends #11-14

Technology



Pharma is in **prime position** to utilize mHealth across the entire value chain

#11

Mobile Health (mHealth) is leading to significant, positive impacts in patient outcomes. Several recent studies of the use of mobile diabetes management tools reported significant declines in A1C for users of the mobile tools over non-users. Patients using mobile tools also reported improved interactions with their providers.^{94, 95, 96}

Patients also expect mHealth will make healthcare more convenient, improve the quality of care and reduce costs.⁹⁷ Not surprisingly, health and economic incentives have triggered the use of mHealth solutions, with 72% of patients in a recent study suffering from poorly managed conditions, and 68% spending 30% or more of their incomes on healthcare.²

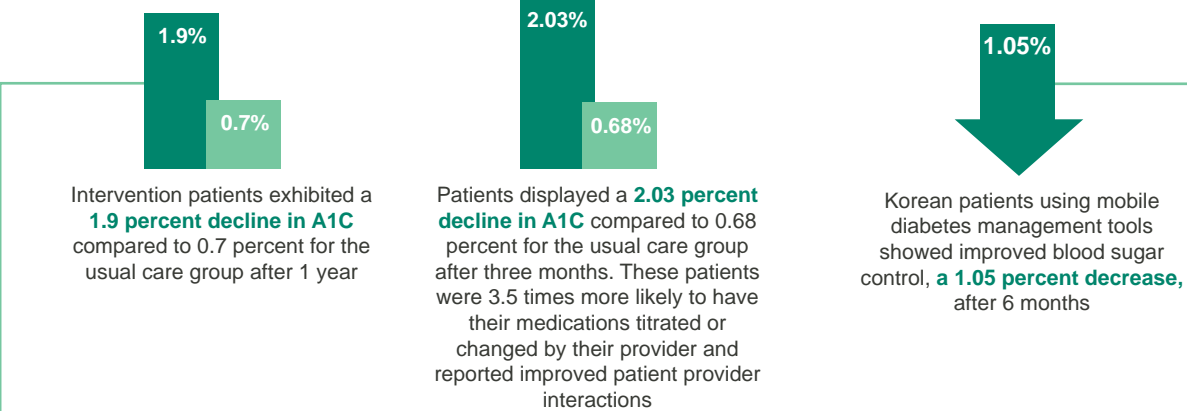
A vast majority of pharma professionals (82%) believe that the industry is trailing other industries in the use of mobile media.^{11, 40} Tracking LinkedIn buzz on mHealth provides some key revelations, including: how mobile technologies are rapidly changing stakeholder healthcare expectations; how to leverage mobile to empower stakeholders and improve outcomes; how to implement mobile in a digital strategy; and whether to use a native app or a web app.^{60, 61, 62, 63, 64}

There are several logical starting points for mHealth initiatives, timed to coincide and support the pharmaceutical lifecycle. mHealth can reduce time

to market, lower overall costs of development and improve quality and health outcomes. The end result is a longer product lifecycle and an improved revenue stream. mHealth optimizes the internal pharma value chain, delivering a solid ROI measured by time and cost reduction and quality improvement.¹⁶

Emerging markets are the trailblazers in mHealth, primarily due to the paucity of existing healthcare. The need for efficient means to deliver healthcare to more people – and the fewer entrenched interests seeking to impede adoption of new approaches – has led HCPs and payers to support mHealth solutions.² Consequently, patients in emerging markets expect more from mHealth than their developed nation counterparts.² As John Lechleiter, CEO of Eli Lilly has noted, “Today our medicines are within reach for about two billion people. How might we reach the other five billion?”

While pharma may be lagging other industries in mobile, it is well-positioned to quickly take advantage of mHealth: widespread access to doctors, payers and opinion leaders; a deep understanding of heavily regulated markets; ability to provide evidence of new products medicinal and economic benefits; ability to navigate the complex reimbursement system; and the necessary distribution channels to move innovative products quickly to market.¹⁶



Korean patients using mobile diabetes management tools showed improved blood sugar control, a **1.05 percent decrease**, after 6 months

mHealth improves patient outcomes

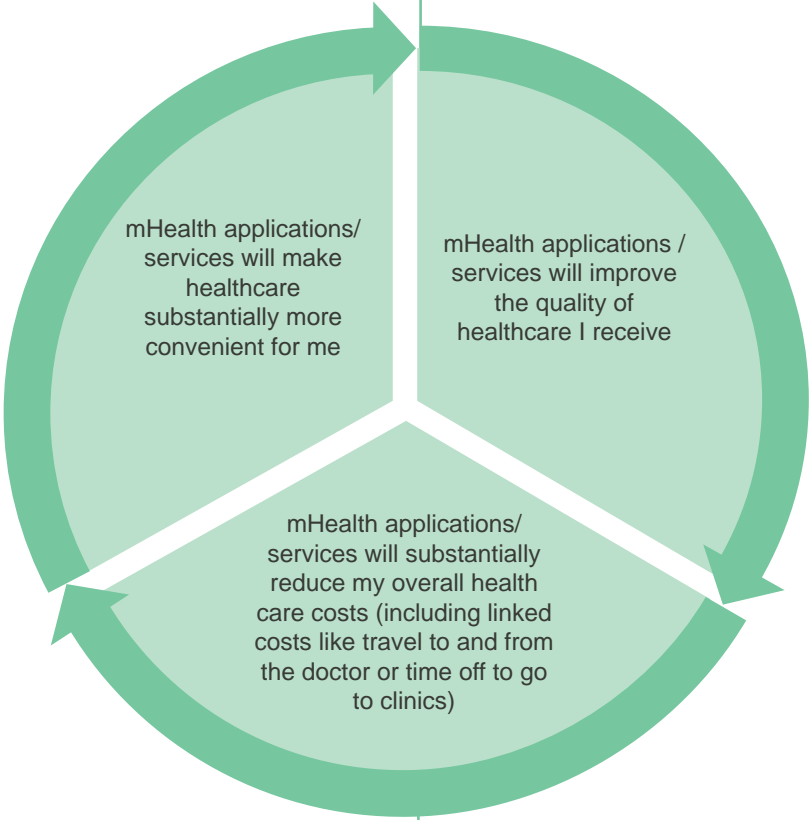
Source: 94, 95, 96

#11.1

Patients have great expectations to mHealth

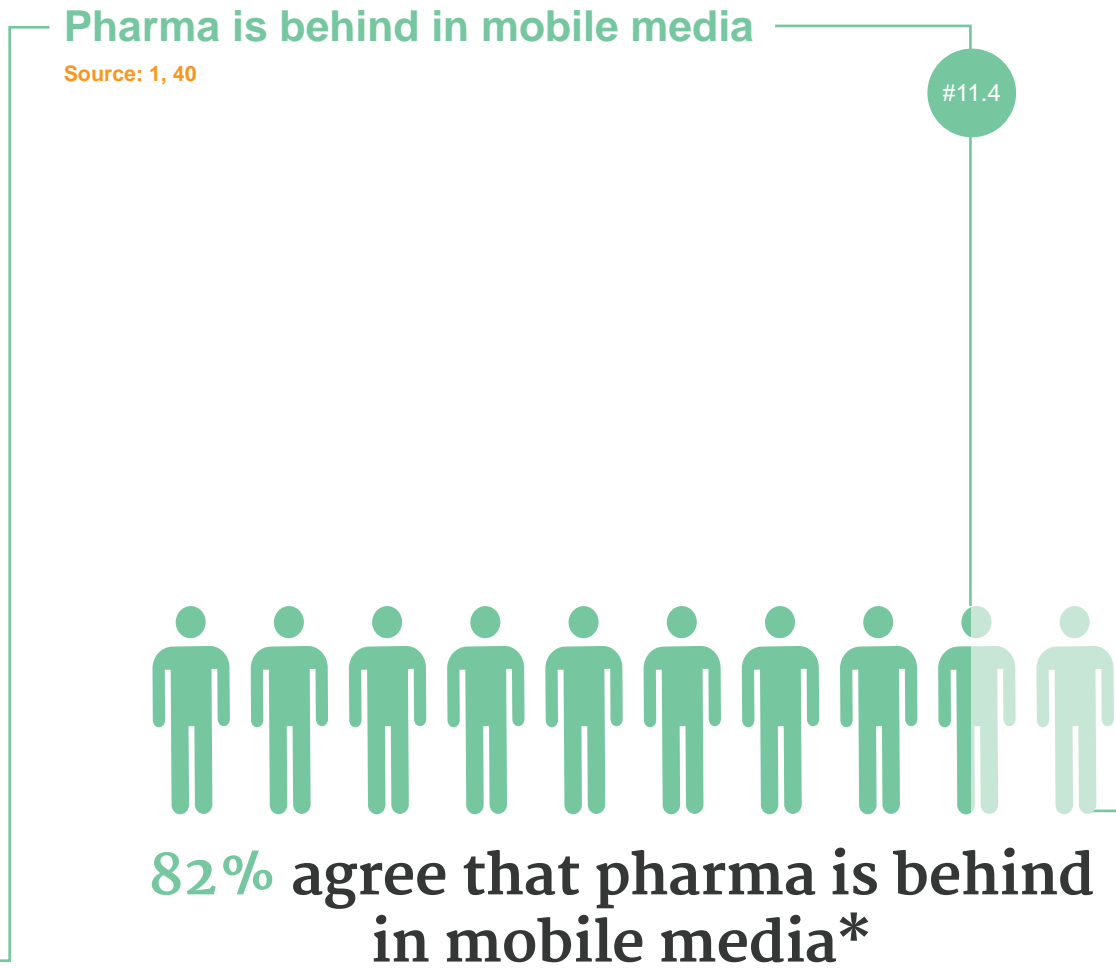
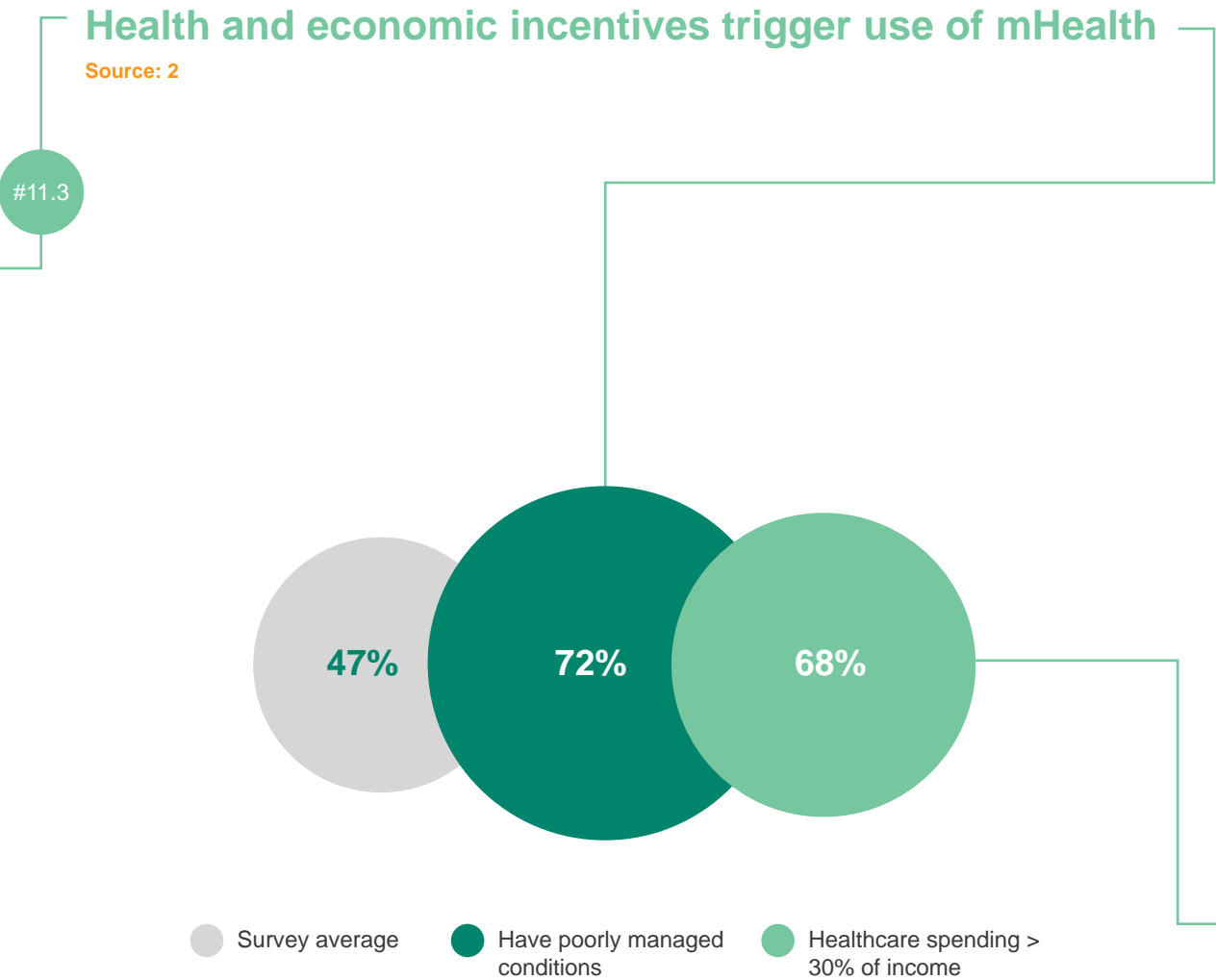
Source: 97

#11.2



Top 3 patient expectations to mhealth:

1. Convenience
2. Quality of care
3. Cost



* With respect to the use of mobile media, how would you describe the Pharmaceutical and Device Industry compared with other industries?

mhealth offers several starting points

Source: 16

#11.6



Group ranking (5)
Top 5 relevant LinkedIn groups were identified by ranking:
· Member volume
· Frequency of posts
· Digital pharma relevance

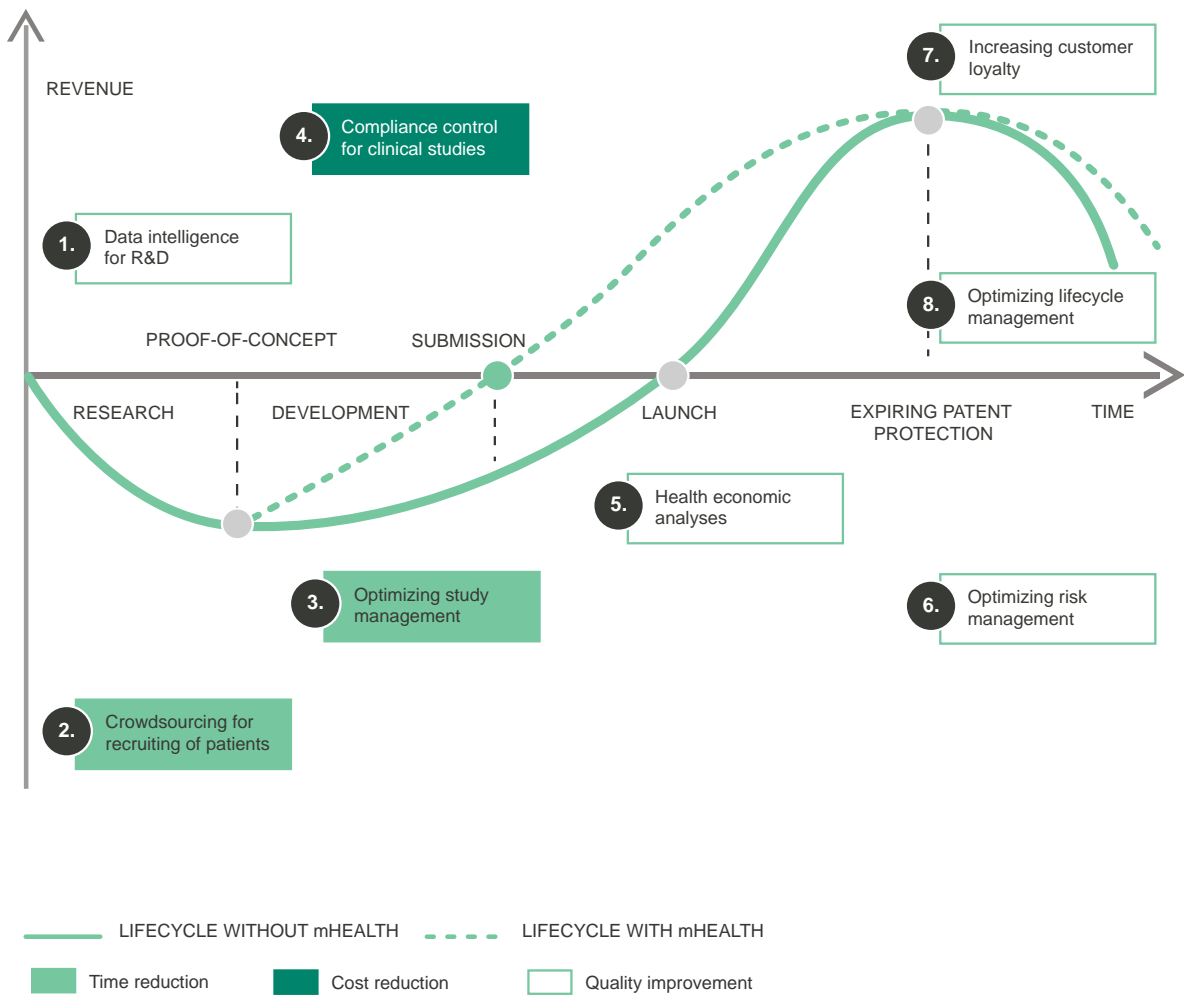
Topic extraction (1000)
· 200 Most popular topics from each of the 5 groups were extracted (only topics posted later than april 1st, 2012 were included).

Sorting
· A combination of manual and automated n-count of “words used in topics” were applied to produce a top 5 list of hot topics.

LinkedIn buzz on mHealth

Source: 60, 61, 62, 63, 64

#11.5



To optimize the internal pharma value chain

Source: 16

#11.7

DATA INTELLIGENCE

Linking early research and study results to additional patient data, combining this access with all other available data sources can open up entirely new routes to innovative products.

PATIENT RECRUITMENT

Combining crowdsourcing technologies with mHealth platforms enable targeted patient recruitment for clinical studies and speed up the development process.

STUDY MANAGEMENT

As a rule, doctors responsible for study activities still record patient data on paper and digitize it later. mHealth can facilitate a direct switch from one medium to another and significantly shorten the time needed to complete the study.

COMPLIANCE CONTROL

mHealth sensors and applications can monitor patients participating in studies and detect patient errors quickly.

HEALTH ECONOMICS ANALYSES

mHealth data can be evaluated from a health economics stand-point to produce a sound cost-benefit analysis. This is a vital tool when it comes to negotiating appropriate prices.

RISK MANAGEMENT

Establishing a digital link to patient histories makes long-term monitoring of potential side effects significantly easier and also shortens response time.

CUSTOMER LOYALTY

mHealth gives the pharmaceutical industry direct access to patients, improving the relationship with patients and cultivating patient loyalty by using mobile platforms combined with social media and other marketing tools.

LIFE CYCLE MANAGEMENT

Intelligent interaction between mHealth technologies and drugs can result in strong interdependencies between taking a drug and using the corresponding service that allow for premium pricing. This can mitigate the effect of expiring patent protection.

QUALITY IMPROVEMENT

TIME REDUCTION

COST REDUCTION

#11.8

Emerging markets are the trailblazers in mHealth and their patients have great expectations

Source: 2



% of respondents who say that in the next three years, mHealth will change:

■ Developed Markets
■ Emerging Markets

Patients in these markets are much more likely to use mHealth applications or services than those in developed countries. Similarly, more emerging-market doctors offer mHealth services than colleagues in developed countries, and more payers cover these

costs. The ability of these countries to leap ahead lies in the paucity of existing healthcare: there is greater demand for change and, just as important, there are fewer entrenched interests to impede the adoption of new approaches.

#11.9

The next frontier: Accessing the remaining 5 billion patients with a winning mHealth strategy

Source: 2, 98

“... the question of how to enable more people on this planet to gain access to our medicines. Realistically, today our medicines are within reach for about 2 billion people. How might we reach the other 5 billion?”

John Lechleiter
CEO Eli Lilly

Find applications and services that bring concrete value to identifiable stakeholders. Someone needs to be willing to pay for change. This may be a single stakeholder or a combination of several, who come together under cost- and risk-sharing arrangements. The benefits of innovation must be clearly discernible to those who can potentially underwrite its development.

Think in global terms.

The main mHealth markets are already, and will continue to be, in the emerging economies. These countries will be sources of substantial innovation that can be transferred to developed markets.

Focus on solutions, not technology.

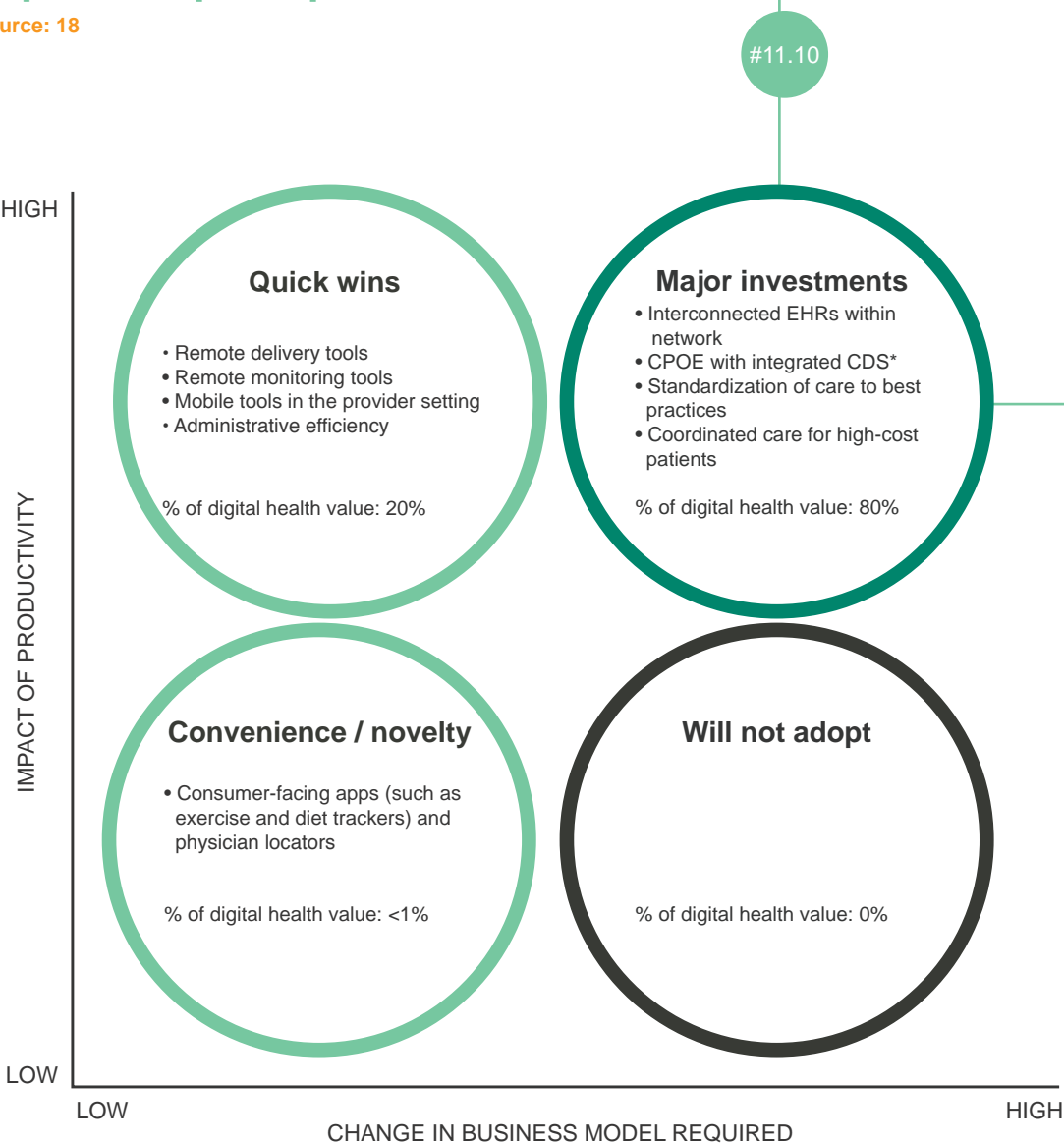
An overemphasis on what mobile devices can do will lead companies to miss chances to solve problems for which people are willing to pay. Businesses outside of healthcare may be the ones to spot those opportunities: many in healthcare have yet to understand the full potential of the new technology. New entrants, on the other hand, must develop a greater understanding of the industry, working with existing providers and payers and co-operating with other companies to build an mHealth ecosystem that supports the long-term use of the technology.

Identify possible partners to create a greater impact and find new value.

Any technology relies on an ecosystem of interconnected suppliers, creators and users. The mHealth ecosystem is only beginning to evolve, and profitable new relationships are there to be found. This evolution will also involve co-operation and co-creation between member organizations, including existing healthcare firms, new technology providers, payers, medical professionals and even patients. This will not only identify the best ways to use the new technology, but will also help to smooth its adoption.

Changes in productivity and business models will impact adoption patterns

Source: 18



* CPOE = computerized physician order entry, CDE= clinical decision support

But pharma is well positioned to take advantage of mHealth

Source: 16



The Pharmaceutical Industry is well-positioned to make intelligent use of the opportunities offered by mHealth and integrate them into existing business models. One of the industry's main advantages is its widespread access to doctors, payers, and other important opinion leaders within the healthcare system. Pharmaceuticals are very familiar with heavily regulated markets. They know how to provide evidence of new products' medical and economic benefits and how to incorporate

products into the complex reimbursement system. In addition, they already have the necessary infrastructure and distribution channels to commercialize innovative products in both the primary and secondary healthcare markets within a short space of time. Pharmaceutical companies are thus in a perfect position to take advantage of mHealth.



Pharma must go beyond Facebook and Twitter to tap into social media's true potential

#12

Pharma lags other industries in leveraging the power of social media to gain insights and connect with key stakeholders. In fact, 93% of pharma professionals agree that pharma is “behind the curve,” while 90% of pharma executives remain anxious about managing the impacts of social media. ^{11, 40}

The aversion to social media due to drug safety considerations has put companies at risk. For too long, pharma has subscribed to “Don’t listen, don’t report” when it comes to Adverse Event information that may surface via social media. That strategy may be invalid. A public tweet that meets all four conditions to qualify as an Adverse Event may oblige companies to report the event. Thus, drug safety teams should be actively monitoring social media. ³⁶

On the positive side, “listening” to social media using data mining tools and observation can deliver powerful information that can drive sales and determine effective marketing strategies. Monitoring can spot rising stars among stakeholders, aid talent recruitment, improve patient enrollment, provide insights into stakeholders and support market research. ^{60, 61, 62, 63, 64}

Social media can generate a wealth of customer-generated content, but it is incumbent on companies to determine the appropriateness of social efforts, as participation varies widely by condition, age cohort and stage in the patient pathway. ^{5, 41, 51, 81} Pharma firms should also keep in mind that most patients are reluctant to talk about sensitive health information on networks like Twitter and Facebook, preferring health sites where they can ask questions and discuss issues anonymously.

A Valtech study of social media covering asthma found that 1 in every 149 social conversations discussed severe asthma, and that views of conversations about severe asthma outnumbered views of general conversations about asthma 15:1. The severity of a disease can impact the potential for social media engagement.

Social listening (monitoring) is an evidence-based research technique that can mine text for specific keywords. Ultimately, this data can be analyzed with traditional data mining techniques to reveal the who, what, when, where, why and how of social engagement, revealing key insights related to the patient pathway. These insights can help measure, identify, map and enroll KOLs, rising stars in the patient and HCP communities, patients for clinical trials, digital and academic partners, talent and more.

Pharma is behind on social media

Source: 11, 40

#12.1



93% AGREE THAT PHARMA IS BEHIND IN SOCIAL MEDIA*

* With respect to the use of social media, how would you describe the pharmaceutical and device industry compared with other industries?



ARE ANXIOUS ABOUT MANAGING THE IMPACT OF SOCIAL MEDIA

The “don’t listen, don’t report” concept is dead

Source: 36

#12.2



- An identifiable patient
- An identifiable reporter
- A suspect drug or biological product
- An adverse experience or fatal outcome suspected to be due to the suspect drug or biological product

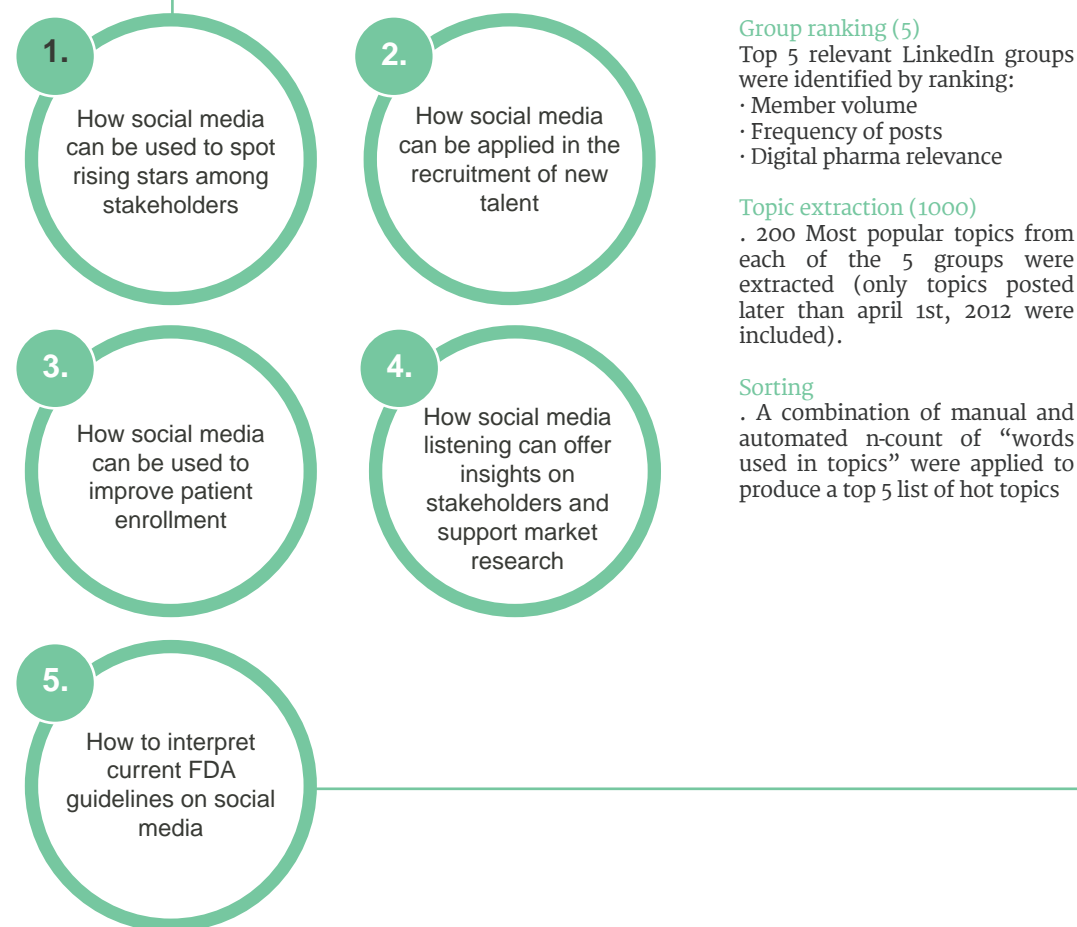
Industry was long hesitant to enter social media space due to the drug safety consideration. If you participate in Social Media it means you need to actively monitor it against any adverse events reports. The standard practice was however, to assume that if pharma is not listening it cannot be obliged to report. On the other

hand such an assumption may be wrong, so as soon as there is a tweet that meets all four conditions, pharma company will be considered obliged to find it and report. Thus, drug safety teams should push their companies towards monitoring of social media.

LinkedIn buzz on social media

Source: 60, 61, 62, 63, 64

#12.3



Social media is much more than Facebook and Twitter

Source: 5, 41, 51, 81

#12.4



“Social Media for healthcare information is often incorrectly used interchangeably to refer to just two key networks, Twitter and Facebook. Consumers do not want to talk about sensitive health issues on their personal profiles. They are turning to thousands of anonymous health sites where they can ask questions and discuss their first hand health experiences without fear of personal exposure or their privacy being compromised.”

(Quote, ePharma Summit)

The use of social media can provide pharma companies with a wealth of customer generated content which, when retrieved and analyzed, is rich input to sales and marketing strategies.

Marketers should consider the appropriateness of these media for their brands before investing in social efforts, as participation varies widely by condition, age cohort and stage in the patient pathway.

The severity of a disease impacts the potential of social media engagement

Source: Valtech

#12.5



Key finding:
For every 149 conversations about asthma in general there is 1 conversation about severe asthma. Severe asthma represents an untapped potential within digital asthma.

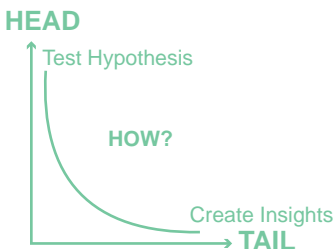
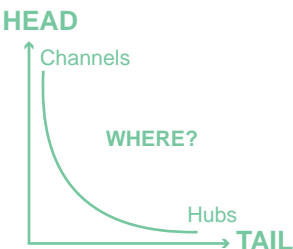
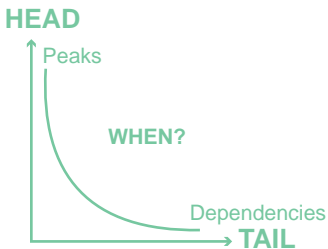
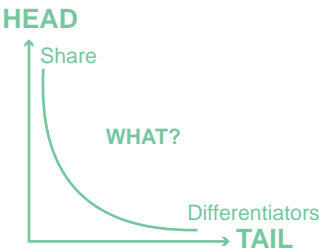
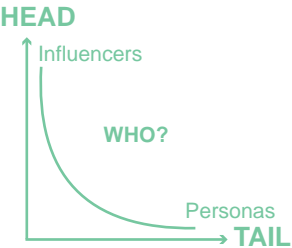
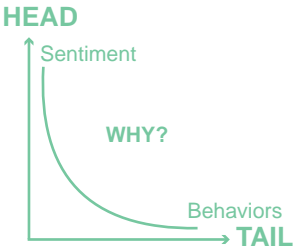


Key finding:
For every 1 view of a conversation about asthma in general there is 15 views of conversations about severe asthma. Severe asthma enables a deeper level of digital engagement.

Social listening is an evidence-based research technique

Source: Valtech

#12.6



Social media listening, also known as social media monitoring, is the process of identifying and assessing what is being said about a company, individual, product or brand on the Internet.

Conversations on the Internet produce massive amounts of unstructured data. It's important, therefore, to define what the goals are for a social media listening initiative.

In a large enterprise, social media monitoring tools can mine text for specific keywords on social networking websites and blogs and in discussion forums and other social media. Essentially, monitoring software transposes specific words or phrases in unstructured data into numerical values which are linked to structured data in a database so the data can be analyzed with traditional data mining techniques.

And an unique opportunity to capture stakeholder insights

Source: 5, 11, 28, 33, 36, 40, 41, 46, 51, 52, 60, 61, 62, 63, 64, 72, 81

#12.7

MEASURE	MONITOR	IDENTIFY
NO. OF MENTIONS	CORPORATE REPUTATION	HOT TOPICS, TREATMENT
SHARE OF VOICE	BRAND REPUTATION	LEVEL OF AWARENESS TREATMENT
MESSAGE PENETRATION	DISEASE REPUTATION	HOT TOPICS, DISEASE
SENTIMENT	ADVERSE EVENTS	LEVEL OF AWARENESS, DISEASE
CAMPAIGN IMPACT	ILLEGAL SELLERS/ COUNTERFEIT MEDICINE	TONE OF VOICE
EVENT IMPACT	COMPETITOR INTELLIGENCE	PREFERRED CHANNELS & HUBS
DIGITAL KPIs	SCIENTIFIC PUBLICATIONS	DIGITAL TRENDS
DIGITAL POTENTIAL	CONFERENCES	POINT OF DIGITAL ENGAGEMENT

MAP	ENROLL	
PATIENT PATHWAY	KOLs	PATIENTS + HCPs
BUSINESS OPPORTUNITIES	RISING STARS	PATIENTS
UNMET STAKEHOLDER NEEDS	POLs	HCPs
STAKEHOLDER NETWORK DYNAMICS	TALENTS	OTHER
PERSONAS	PATIENTS FOR CLINICAL TRIALS	
MOST LIKELY STAKEHOLDER BEHAVIOR	ACADEMIC PARTNERS	
HELP SEEKING & REFERRAL PATTERNS	DISEASE AMBASSADORS	
PRESCRIPTION PATTERNS	DIGITAL PARTNERS	



Pharma must go big on collaboration to close the loop on big data

#13

Digital health initiatives revolving around “big data” are ongoing among global pharma firms, but continue to trail other industries. Nearly two-thirds of pharma professionals surveyed believe their companies could do a better job of leveraging big data to support business strategies.³

Capturing the full potential of big data will require collaboration across the healthcare ecosystem with life sciences organizations, providers, payers and social and governmental organizations.¹⁰ The surge in healthcare-related data provides opportunities to gain insights and competitive advantages like never before.

Pharma executives understand their organizations’ shortcomings in regard to big data. On a 1-5 scale, nearly all executives interviewed for a recent survey ranked their firms at three or below for personalization, analytics and responsiveness.¹⁹

So where to start? Appoint a Chief Data Officer (CDO). This role works across traditional functions and champions data collection, prioritization, distribution, analysis and security.⁵ The CDO should be given the management authority for a number of cross-functional tasks, including: hiring, integration of third party tools, development of qualified teams and related infrastructure, streamlining workflows, speeding delivery of relevant data to end users, and, ultimately, deriving insights and value from data.⁴⁸

Pharma must follow a few fundamental internal precepts to ensure the success of a big data strategy. Optimizing analytics within the organization means collaboration across the entire enterprise. Executives and management must encourage disruption of the status quo, moving beyond traditional organizational boundaries. Accept no objections (and there will be plenty). The organizations that best harness and share data will become leaders with distinct competitive advantages.¹⁰

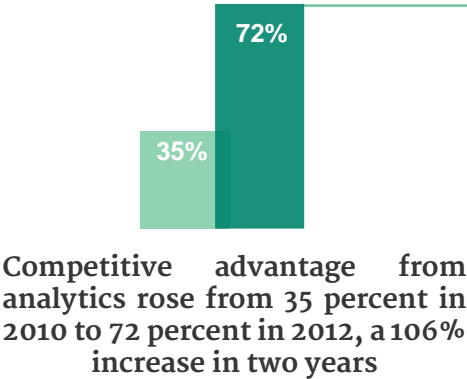
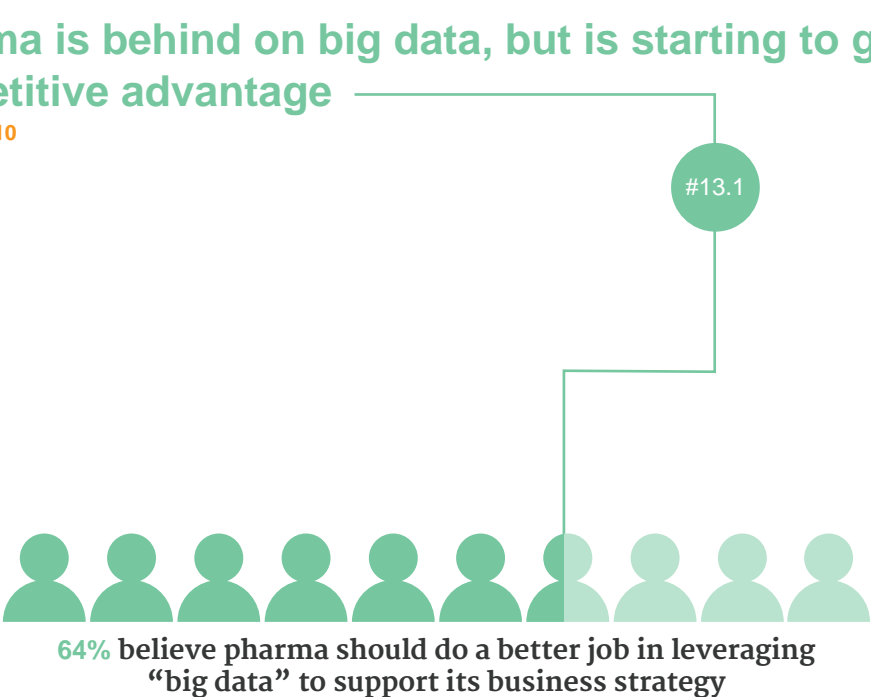
Any big data design (for a specific treatment, condition, or disease) should have as its mission to create a transparent data hub that leads to improve outcomes across the patient pathway, and to deliver a better research base. Every data model should be validated by an external panel of relevant thought leaders.

Ensuring that optimal value will be gained from analytics requires simplifying the process by uncluttering dashboards and limiting the number of metrics, focusing on the meaningful metrics, establishing digitally-embedded action alerts triggered by designated behaviors, simple visualizations and designation of a few, highly-relevant metrics as KPIs.⁴⁸

Advanced analytics add levels of end-user sophistication, moving from purely retrospective analytics to predictive and prescriptive analytics that leverage historical data to understand future probabilities and provide immediate responses to improve efficacy.⁴⁸

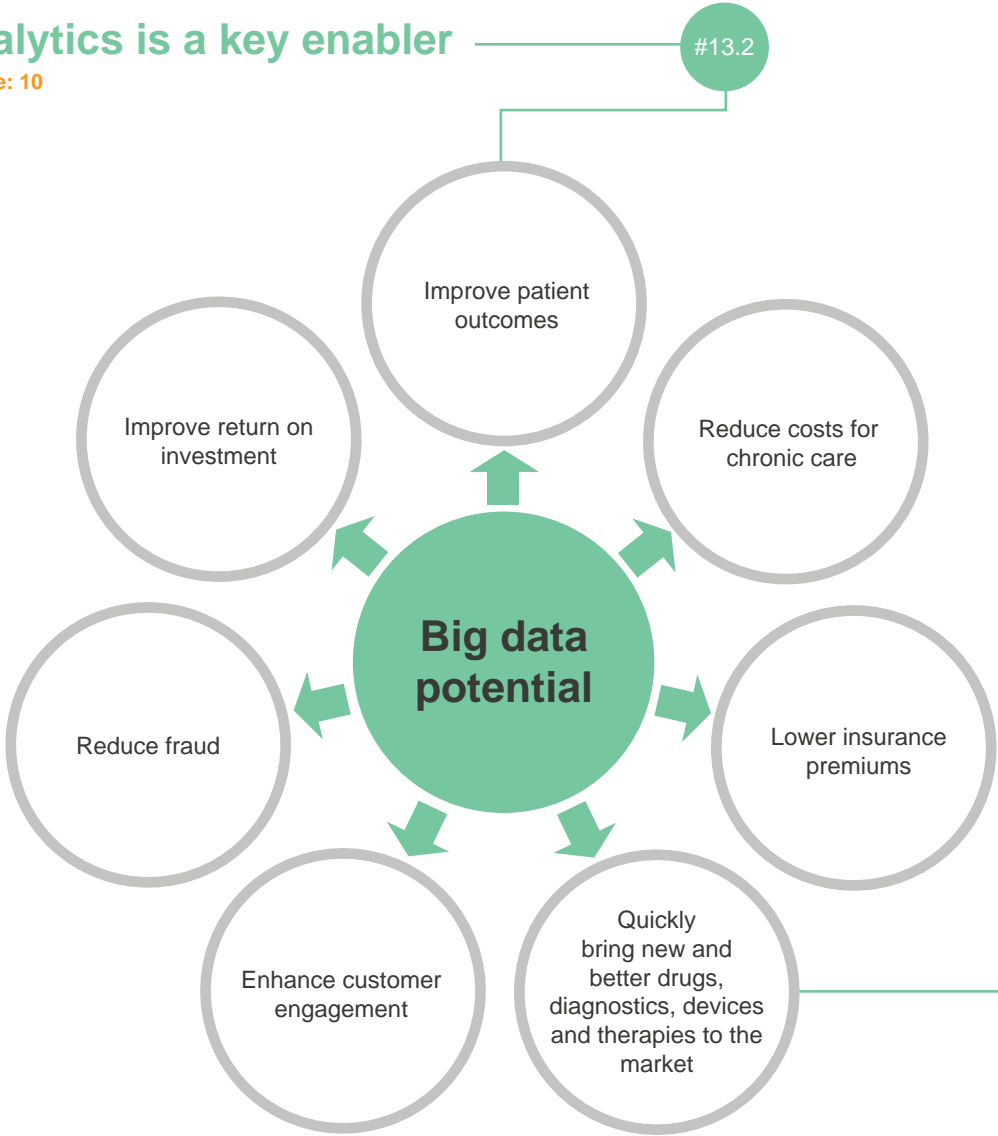
Pharma is behind on big data, but is starting to gain competitive advantage

Source: 38, 10



Analytics is a key enabler

Source: 10



While almost two-thirds of organizations across the healthcare ecosystem have analytics strategies in place, research shows that only a fifth are driving analytics adoption across the enterprise. The key barriers are a lack of data management capabilities and skilled analysts, as well as poor organizational change management. To develop and translate insights into actions that enhance outcomes, organizations will need to collaborate across an expanding ecosystem.

The healthcare ecosystem is the convergence of otherwise separate entities, such as life sciences organizations, providers and payers, as well as social and government agencies. This convergence, along with enhanced connectivity and mobility, has resulted in a tremendous surge in healthcare-related data that can help create insights and tangible actions.

But pharma has yet to close the loop on big data

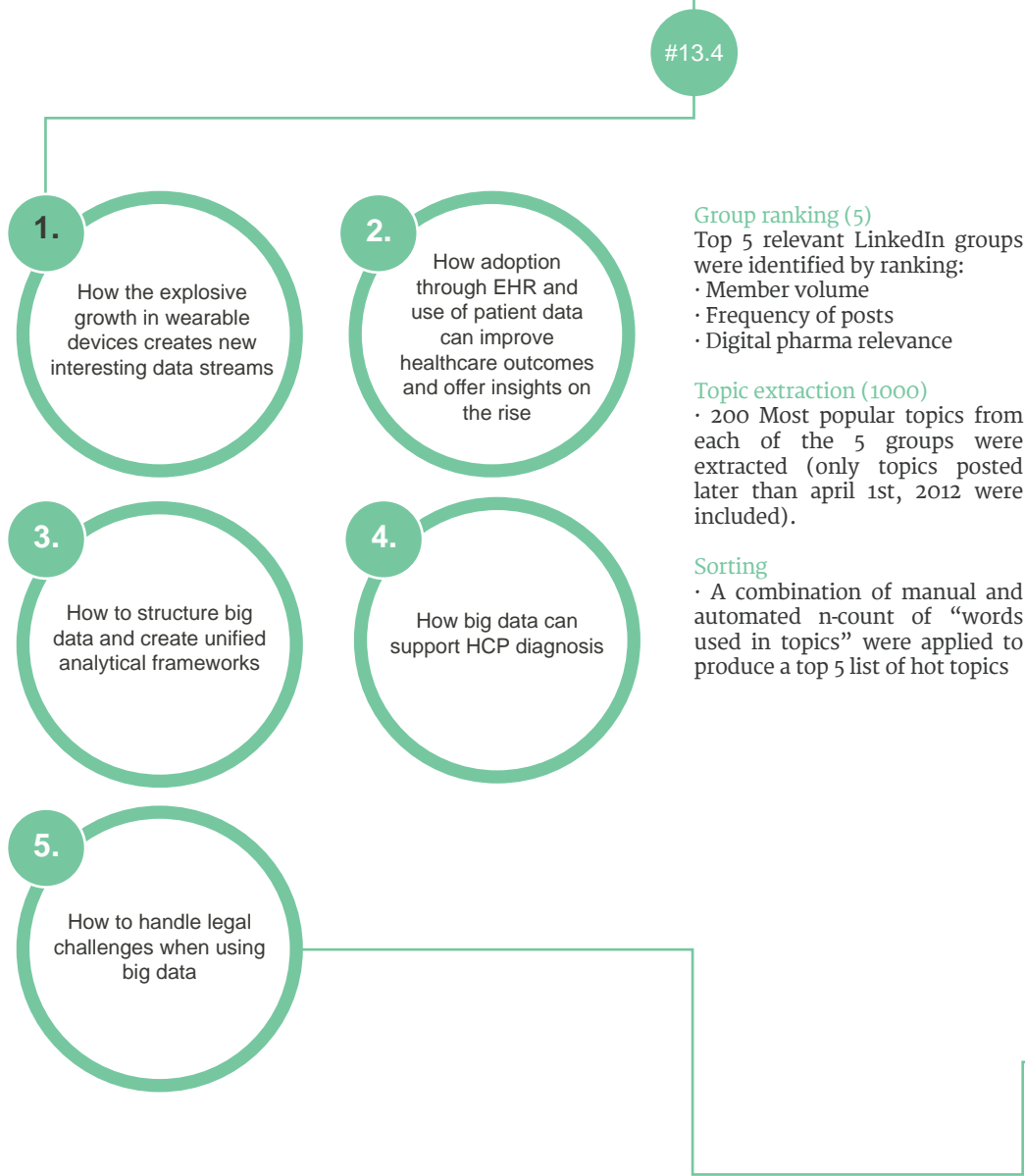
Source: 19



Note: Several executives were interviewed from 14 different pharma companies. Not all interviewees responded to each question. The placement on the chart represents the self-assessment of each pharma company.

LinkedIn buzz on big data

Source: 60, 61, 62, 63, 64



Where to start? Appoint a CDO

Source: 5

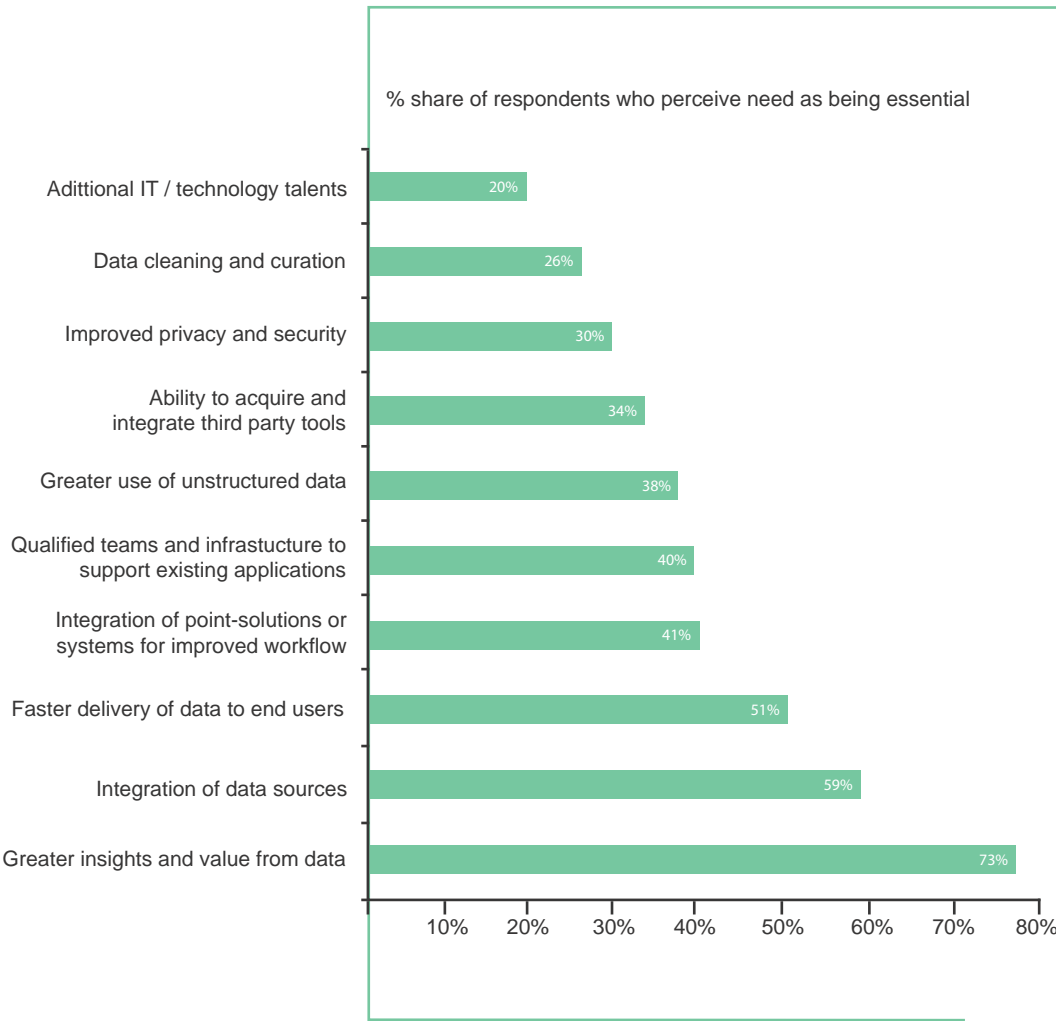
#13.5



CDO: Chief Data Officer

Designing for analytics is more than simply adding data requirements to a software or process. It is blurring the lines between the life sciences business processes and IT functions. For example, the concept of value management – understanding the value of a new product on trial through design and data collection early in its development – has cross-functional impacts. Many companies are recognizing this advantage and

creating a prominent new role in the organization, frequently designated as the Chief Data Officer (CDO). This role works across traditional functions and champions activities within the organization for collection, prioritization, distribution, analysis and security of data. This is often the first step to moving towards an insight-driven business.



#13.6

And let the CDO address the essentials

Source: 48



Optimize analytics within your own four walls

As much as collaboration is necessary across the ecosystem to improve outcomes for all parties, the first step is to make sure the analytics strategy is applied across the entire enterprise.



Encourage disrupted collaboration

This is collaboration that disrupts the status quo. Within the healthcare ecosystem the boundaries of organizations are evolving. So, too, should the roles of those organizations.



Accept no objections

In this transitional stage there will be many objections and barriers. (e.g., regulatory constraints for a life sciences company when engaging at the patient level). Do not limit your vision in fear of these objections. They can be handled. Innovative market leaders across the healthcare ecosystem are proving it every day.



In today's information age, data rules. And the organizations that can harness and share that data to create insights, inform actions and drive better outcomes – across all the components of the healthcare ecosystem – will be those most likely positioned to become the outperformers of tomorrow.

With a winning big data strategy

Source: 10

#13.7

Big data is big collaboration

Source: 12

#13.8



External collaborations are those between the company and stakeholders outside its four walls, including academic researchers, CROs, providers, and payers. Several examples show how effective external collaboration can broaden capabilities and insights:

- External partners, such as CROs, can quickly add or scale up internal capabilities and provide access to expertise in, for example, best-in-class management of clinical studies.
- Academic collaborators can share insights from the latest scientific breakthroughs and make a wealth of external innovations available. Examples include Eli Lilly's Phenotypic Drug Discovery Initiative, which enables external researchers to submit their compounds for screening using Lilly's proprietary tools and data to identify whether the compound is a

potential drug candidate. Participation in the screening does not require the researcher to give up intellectual property, but it does offer Lilly a first look at new compounds, as well as an avenue to reach researchers who are not typical drug-discovery scientists.

- Collaborative "open space" initiatives can enable experts to address specific questions or share insights. Examples include the X PRIZE, which provides financial incentives for teams that successfully meet a big challenge (such as enabling low-cost manned space flight), and InnoCentive, which offers financial incentives for individuals or teams that address a specific problem (such as determining a compound's synthesis pathway).
- Customer insights can be used to shape strategy throughout the pipeline progression.

Giving birth to great big data designs

Source: Valtech customer concept

#13.9



Mission: To establish a transparent big-data hub enabling increase in help-seeking behavior, improved diagnostic outcomes and a better research base.

Tools to manage data: Screening test, info graphics, bladder diary and treatment plan. Data model validated by panel of thought leaders.



Limit the number of metrics - dashboards may be too complicated or confusing to drive action
Make metrics more meaningful - use predictive or prescriptive analytics that serve the answers to the user; limit the number of metrics that simply describe the marketplace or trends so implications are clear
Digitally embed analytics as action alerts within performance tools; dashboards are still useful but behavior triggers will guide users to take action
Create simple visualizations - ensure a high level of ergonomics and consumable formats
Improve click-through speed and reduce user clicks -if a tool is not fast and easy to use, users have demonstrated they will not use it
Designate a few metrics as key performance indicators that the entire organization will use to track the consequences of actions taken

Improving the value of analytics

Source: 48

#13.10

And levels of end-user sophistication

Source: 48

#13.11

	Retrospective analytics	Predictive analytics	Prescriptive analytics
Definition	Displays a picture of what happened.	Informs how future behavior might unfold based on current trends.	Suggests actions to improve efficacy.
Function	Requires interpretation by user.	Trends already interpreted and predictions made. Requires user to determine possible actions.	Determines optimal responses to trends. Guides the user to high-value actions.
Output	Typically spreadsheets and dashboards. Sometimes alerts of trend breaks.	Delivered alerts and action triggers within applications.	Options presented to users in the form of menus. Alerts recommending action.



Advanced analytics

To drive commercial success as market complexity has grown, analytics have progressively gotten more sophisticated. Efforts to build intelligence into tools mean retrospective analytics, which displays a picture of what happened in the market in the recent past, are being replaced by ones that take the user farther

along the decision-making process. These include predictive analytics that use past trends to help the user understand future probabilities, and prescriptive analytics that conclude based on past trends and current states the actions that should be taken to improve efficacy.



Pharma must invest heavily into data interoperability to reach multichannel maturity

#14

The value of gathering and collecting online data from patient and HCP interactions can deliver rich, real-life behavior information that goes well beyond classic market research. When combined with meaningful segmentation, content can be customized quickly in digital channels to deliver relevant messaging and content to the right customer via their preferred channel, increasing the likelihood that they will respond.¹⁹

To date, no pharma company has achieved full, multi-channel marketing maturity. The process involves six distinct steps, from having no closed loop marketing (CLM) implementation or planning, to having full multi-channel closed loop marketing (MCLM) with all channels fully integrated, leveraging analytics to rapidly update marketing assets and using robust segmentation to deliver customized campaigns.¹⁹

CIOs need to identify emerging cloud technologies that will provide interoperable systems that save money and can be tailored to the unique needs of life sciences firms. C-Suite leadership must embrace this transformation by jointly setting priorities and driving the renewal process forward. Putting information technology to work in life sciences requires optimizing each key parameter involved in the process: Storage & Platform, Application, Interoperability and Analytics.⁴⁸

Pharma executives recognize that interoperability is necessary to improve workflow speed and performance, and break down siloed behaviors that inhibit efficiency. The current state of redundant data, lack of central data repository, multiple views of what constitutes “the truth,” and maintaining and managing co-existing systems add unsustainable complexity and cost to the business.

Future state goals would streamline these processes by providing integrated application suites that deliver a single view of “the truth,” a common, enterprise-wide data repository, cloud-based accessibility, security and compliance protocols built in, global access control to accommodate separate business needs and an intuitive user experience. However, no third party will offer enough applications to become a single source.⁴⁸ In addition, there is a need for transparent standardization for data collection and interchange in order to reap optimal value from collected information.¹⁰

Implementing a CMS is a “must-have” for global pharma firms. When robust CMS functionalities are properly implemented, costs are driven down while efficiency and stakeholder engagement rise. The CMS becomes the set of tools that allow global pharma firms to overcome the primary obstacles of control, security and timely execution.

Multichannel marketing: A journey towards an integrated customer engagement model

Source: 5, 19

#14.1



By gathering and continuously analyzing data from customer interactions, companies can get insight into customer behavior that comes from real life, not from market research. Combined with meaningful segmentation, this insight allows accurate customization of content – quickly achieved in digital channels at least – so that the right message and the most relevant content are delivered to the right customer via their preferred channel. To put it simply, the customer can get “what they want, how they want it, when they want it”, increasing the likelihood that they will respond.

Case study: One global pharmaceutical company’s effort to build digital capabilities illustrates the steps required to become digitally competitive. To implement its new, digitally enabled customer strategy, the company established several coordinated transformation efforts. The first one established a way of codifying every customer interaction across channels. This foundation helped the company to build business rules that allow coordination across channels and provide a 360-degree view of interactions with HCPs, which can be used by clinical and sales functions.

In parallel, the company revamped its master customer database to collect new kinds of data on the health care environment, including how its customers were using digital technology.

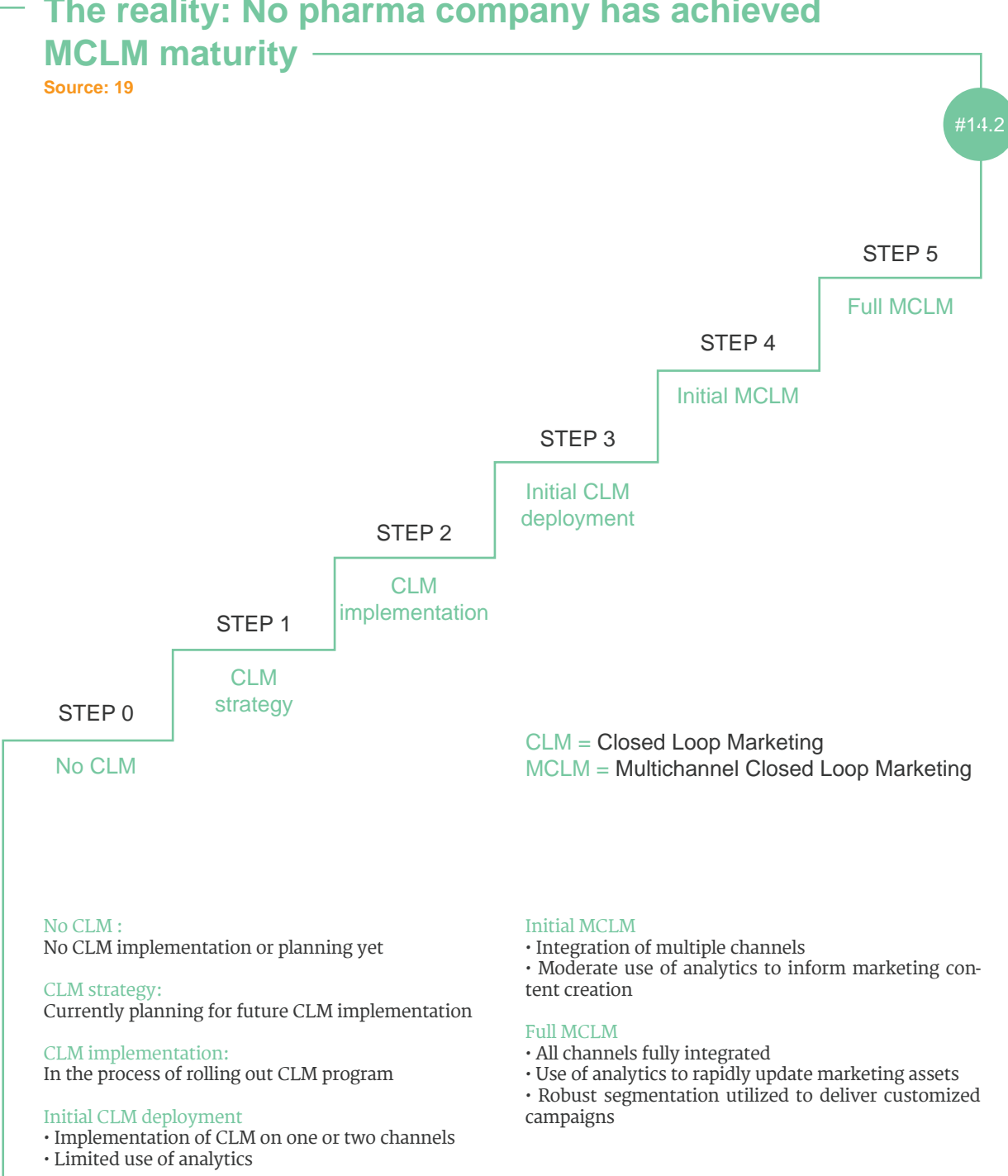
The next step in its digital evolution involved integrating a digital marketing platform. It services requests for information from HCPs intelligently and consistently across a variety of formats. The format and messaging is based on the stated or observed preferences (for example, videos, webcasts, e-details). This is a powerful shift in personalizing experiences for physicians, in which traditional rep-based detailing becomes one of many ways of engaging with the company.

At this time, the company is considering overlaying the platform with adaptive intelligence that can coordinate a multi-channel response. For example, in the U.S., an HCP emailing a reimbursement question would get tailored response based on analysis of combined intelligence from past interactions across channels.

The reality: No pharma company has achieved MCLM maturity

Source: 19

#14.2



Its time for the CIO to take charge

Source: 48

#14.3



Current market challenges are putting pressure on the margins of life sciences companies with a greater impact on large companies facing product expiries. The current IT burden within life sciences and especially these larger companies is high since legacy systems have significant inefficiencies. Companies have attempted to address these, but have done so using horizontal platforms that are not tailored to the life sciences industry.

Efforts to get these to work for the life sciences industry have been similarly costly. These pressures are urgent but emerging cloud technologies that are life sci-

ences-focused can provide a way forward. The CIO will urgently need to assess ways to leverage cloud storage, platforms and applications to create interoperable systems that save money. This can only be accomplished as part of a more integrated strategic relationship with others in the commercial organization. Supporting such efforts will require the entire executive management team of life sciences companies to recognize the transformation that new technologies can bring to their organizations – and jointly setting priorities, avoiding pitfalls and realizing the promise.

Storage & Platform	Application	Interoperability	Analytics
Cloud-based A private or public off-premises cloud to house your data store.	Strategic Select cloud-based applications system that are best fit for purpose and specifically for life sciences to rapidly gain capability.	Shared data Common data repository or enterprise warehouse with a data model designed for healthcare serving many or all applications designed for healthcare serving many or all applications.	Embedded analytics Intelligent cloud systems with analytics completely embedded in workflow to inform decision making and deliver insights... not data.
Compliant Protocols and signed BAAs in place to ensure compliance with patient privacy and data residency requirements for health info.	Simple & user-friendly Visual display that creates an interactive and intuitive experience and increases use rates.	Cloud-based application suites Prebuilt, modular suites integrate the right systems seamlessly on a cloud platform and reduce silos.	Prescriptive & predictive Use of clearly actionable prescriptive analytics where possible.
Secure Security, identity and access controls in place.	Current Ensure master data management flows into applications reflecting changes in life sciences data structures and relationships.	Shared look and feel Constant visual display between applications that creates an intuitive experience and increases use rates.	Advanced metrics across the enterprise Enterprise-wide performance systems aligned to future realities including drug quality metrics, ACO metrics, net profitability.
Globally accessible and connected Available for use across the global enterprise or for use by multiple healthcare stakeholders.	Mobile applications Deploy mobile applications to improve customer engagement, and increase business intelligence use internally.	Shared standards & governance Access control to accommodate local/global business needs across the enterprise.	Correct questions Query tools that help commercial users create clinically-correct queries on patient and EMR data.
Extendable Leverage platform tools to rapidly build custom applications, link to existing ones and deploy mobility.	User enabling Applications should make users self-sufficient to analyze trends and take customer focused action.	Tied to legacy systems Integrate cloud platform applications with on-premises legacy applications using API.	Unstructured data use Use Natural Language Processing systems to create novel analytics from interviews, social media and EMR data across the enterprise.

Putting information technology to use in life sciences

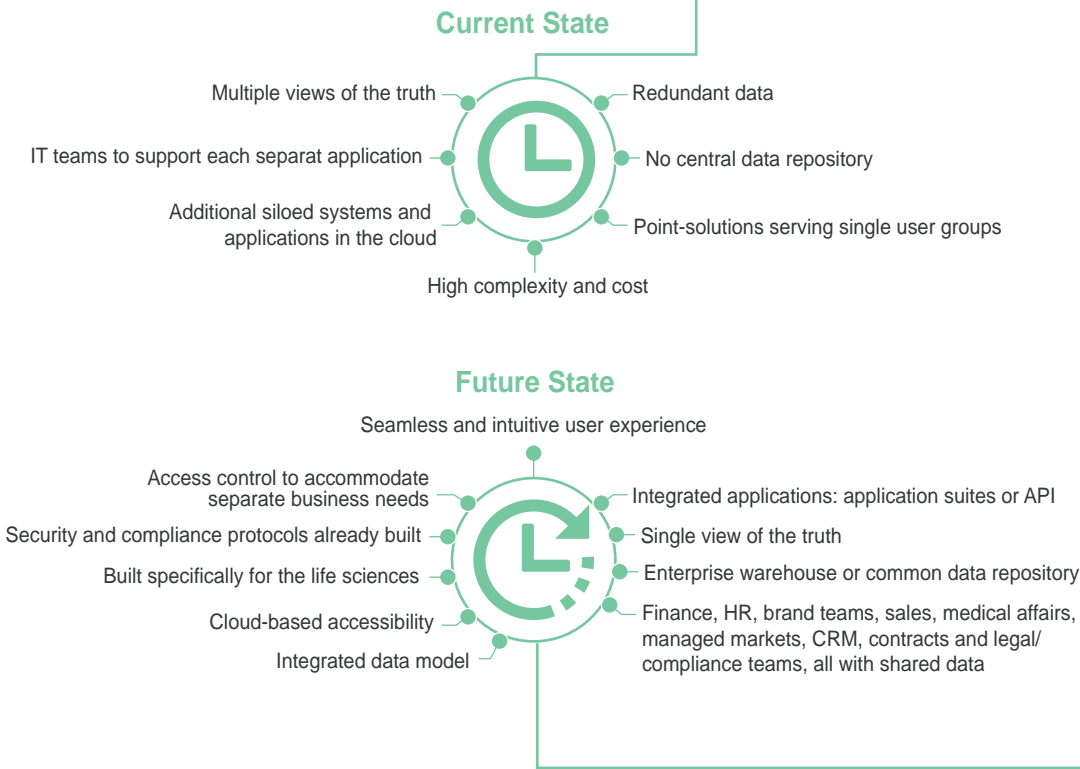
Source: 48

#14.4

Taking a more evolutionary path to life sciences applications

Source: 48

#14.5



The cloud has perpetuated a problem of disconnected systems and applications rather than solving it, creating continued pressure on life sciences companies to develop an enterprise interoperability strategy.

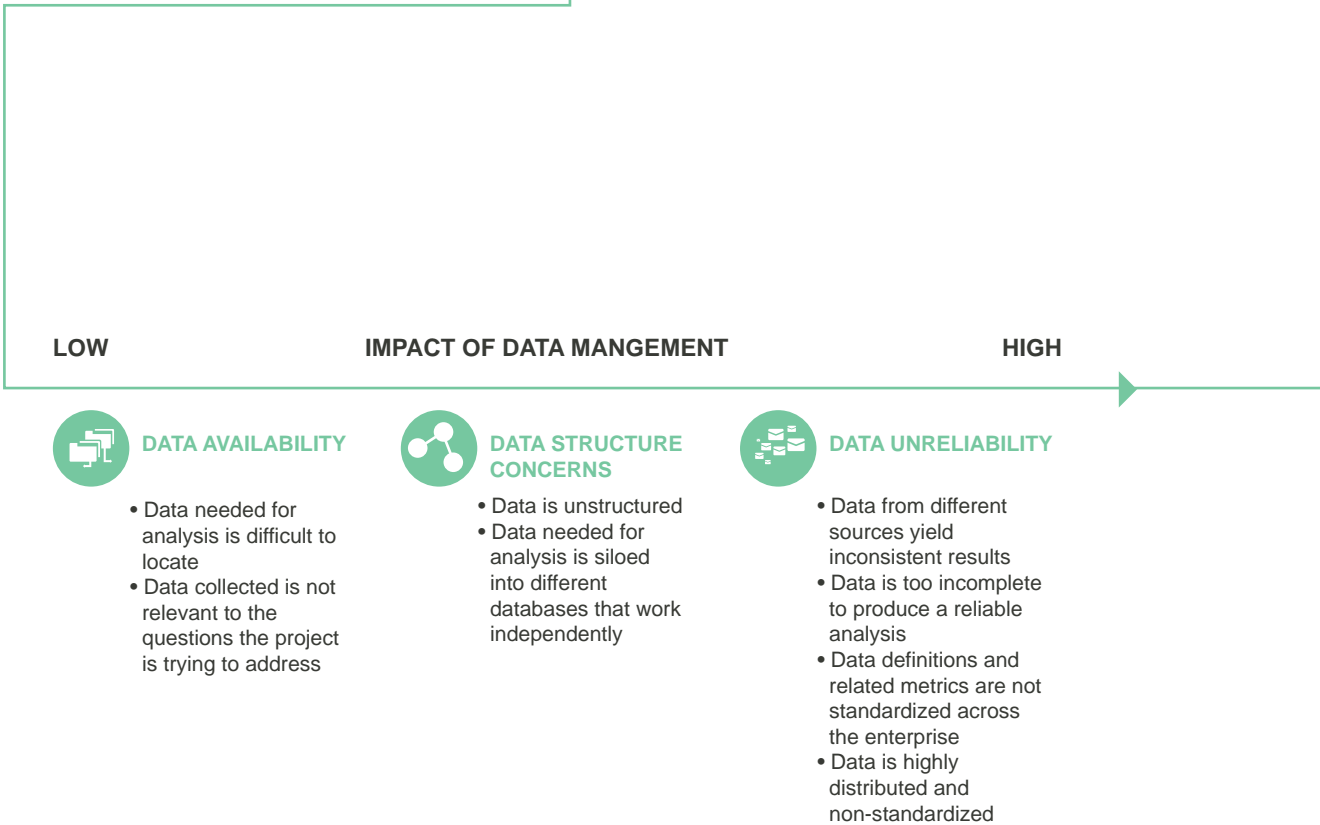
Companies see interoperability as a way to optimize their commercial organization by improving workflow speed and performance, eliminating conflicting views of the truth across departments, and paring vendor teams managing manual data handoffs.

85% of respondents said that ‘integration of point-solutions or systems across the organization for improved workflow’ was needed. Third parties are developing pre-built suites of applications for the life sciences that will help them progress towards an enterprise-wide system and benefit from efficiencies, but no third party will offer enough applications for companies to become single source.

And upgrading the entire data management discipline

Source: 10

#14.6



The highest impact on data management is caused by data unreliability, i.e., data from different sources that yields inconsistent results; data that is too incomplete to produce a reliable analysis; data and metrics with non-standard definitions; or data that is highly distributed and non-standardized. For many organizations,

much of their analytics energy is spent collecting and arguing about the data, instead of debating and acting upon its findings. As one survey respondent noted, “We are looking to standardize data collection and interchange through transparency, data standards and access to get value from the information.”

Functionality	Description	Internal Benefits	Business Case
Deployment & Publishing	Ability to create, publish and deploy content across multiple channels for multiple device formats from a single point.	<ul style="list-style-type: none">• Create “intelligent” content that formats automatically: desktop, mobile, tablet.• Experience content the way audiences will see it in real time as it is created.• Get legal sign-off for all channels/formats in a single pass• Publish approved content with the touch of a button to multiple channels.	<ul style="list-style-type: none">• Speed legal approval.• Cut time to market.
Content Editing / Import / Search	Easy-to use interface for editing, importing and searching existing content.	<ul style="list-style-type: none">• Ability to quickly and easily edit content.• Add new, relevant content to existing sites and/or distribute new content to stakeholders.• Quickly find all content that may need to be edited for legal or other reasons.	<ul style="list-style-type: none">• Rapidly adapt content to market needs and stakeholder response.• Key to successful agile, multi-channel marketing.
Structural & Graphical Flexibility	Centralized control of content and assets coupled with flexibility to allow proscribed local control.	<ul style="list-style-type: none">• “Lock down” selected content and assets.• Provide brand managers with an agile, adaptable marketing environment.• Allow brand managers to leverage specific local knowledge within markets.• Balances need for control with unpredictable nature of legal, regulatory and compliance issues.	<ul style="list-style-type: none">• Engage local stakeholders on their terms, according to their unique market needs.• Customize and optimize human-to-human communications, driving improved response/ engagement.

#14.7

Implementing a robust CMS is a “must-have”, part I

Source: Valtech

Functionality	Description	Internal Benefits	Business Case
Taxonomy & Metadata	Ability to categorize content to make it easily searchable.	<ul style="list-style-type: none">• Allows stakeholders to easily find and access information from organic search and within websites or other channels.• Can be performed by editors or automatically.	<ul style="list-style-type: none">• Improve engagement with key stakeholders by making relevant information and communication channels easier to find.
Content Atomization	“Atomize” approved content into smaller, customized, personalized pieces that can be delivered based on analytics (search, page clicks, etc.) to individual users, formatted appropriately for channel/device.	<ul style="list-style-type: none">• Increases efficiency and shelf-life of approved content.• Leverages power of market-driven analytics to deploy personalized content across channels and across platforms.	<ul style="list-style-type: none">• Delivers targeted, relevant content to stakeholders based on their own interests, increasing engagement.
User Roles & Workflow	Ability to set rules on content and control access for internal and external audiences, including legal, within the CMS; simplifies governance.	<ul style="list-style-type: none">• Develops workflow for content legal approval.• Ability to set rules globally, and for each specific geography based on unique set of regulatory requirements.• Adapts content automatically for rules.• Permits automated translation based on compliance rules.• Simplifies access governance for external audiences, from agencies actively working on content development to users – HCPs, key opinion leaders and consumers/ patients.• Set security protocols for access to key data such as clinical trials and other data that needs to be “locked down”.	<ul style="list-style-type: none">• Speeds time to market.• Limits liability.

#14.8

Implementing a robust CMS is a “must-have”, part II

Source: Valtech

Functionality	Description	Internal Benefits	Business Case
DAM Integration	Digital Asset Management control that simplifies rule-setting for content and digital asset use.	<ul style="list-style-type: none">• Easily set permission-based rules for use and access on all content, including imagery, video and other digital assets.	<ul style="list-style-type: none">• Limits liability for misuse or non-contracted use of marketing assets.
Localization & Internationalization	Automated translation and approval workflow.	<ul style="list-style-type: none">• Workflow can streamline legal approval and other internal processes.	<ul style="list-style-type: none">• Speeds time to market globally.
Reporting & Monitoring	Meet FDA five-year audit requirements on marketing content; track analytics securely behind company firewall; generate customizable reports.	<ul style="list-style-type: none">• Meet regulatory and compliance needs• Ability to set self-optimizing content based on market-driven analytics (i.e., move high-performing content forward).• Global governance capabilities to instantly lock down systems, content, if necessary.• Set rules for local customization and monitor content for compliance.• Highly-visible analytics and easy-to-read dashboards make managing and optimizing content easier and faster.	<ul style="list-style-type: none">• Meet regulatory and compliance needs.• Optimize approved content based on analytics to drive higher engagement and response rates.• Deliver the right message to the right visitor; visitor segmentation capabilities allow message personalization.• Easy-to-manage global deployments.• Drive high-performing personalized and customized content forward automatically to increase engagement and response.

#14.9

Implementing a robust CMS is a “must-have”, part III

Source: Valtech

Implementing a robust CMS is a “must-have”, part IV

Source: Valtech

#14.10

Functionality	Description	Internal Benefits	Business Case
Performance, Scalability, Security	Ability to handle volume across channels; deliver data and analytics in real time; scale as needed; and provide required security.	<ul style="list-style-type: none">• Externally, performance is critical to a positive user experience.• Internally, performance includes ability to monitor data and analytics in real time to provide accurate business intelligence and inform decisions.	<ul style="list-style-type: none">• Improves user experience and engagement by streamlining user interaction and response times.



A checklist of “Must-Have” CMS platform functionalities for success: A highly-regulated global concern faces a myriad of marketing challenges online. Multi-channel “pull” marketing, particularly social media, presents an additional set of challenges. These require a powerful and unique set of tools that address the primary obstacles of control, security and timely execution.

The CMS must be robust, user-friendly and highly adaptable to the set of circumstances and requirements unique to the company. The functionalities described here are critical to ensuring multi-channel efforts are manageable, effective and compliant. In addition, the system should be scalable and delivered with a level of support that optimizes change management practices and revised structures within the company.



References

001

PwC. Swanick et.al. (February 2014). Fit for the future, 17th Annual Global CEO Survey. Key findings in the pharmaceuticals and life sciences industry. [www.pwc.com](#)

002

PwC. David Levy (February 2014). Emerging mHealth: Paths for growth. [www.pwc.com](#)

003

PwC. Swanick et. al. (February 2013). Dealing with disruption, 16th Annual Global CEO Survey. Key findings in the Pharmaceuticals and Life Sciences industry. [www.pwc.com](#)

004

Accenture. Anne O’Riordan et. al. (2013). Life in the New Normal: The Customer Engagement Revolution. [www.accenture.com](#)

005

Accenture. Anne O’Riordan et. al. (2013). Accenture 2013 Technology Vision. Every Life Sciences Business is a Digital Business. [www.accenture.com](#)

006

Accenture. Shawn D. Roman et. al. (2014). Great Expectations: Why Pharma Companies Can’t Ignore Patient Services. [www.accenture.com](#)

007

Booz and Co. Anu Gupta et. al. (November 2013). Digital Health: A Way for Pharma Companies to Be More Relevant in Healthcare. [Www.booz.com](#)

008

Booz and Co. Ken Favaro et. al. (2014). Biopharma in 2014: Growth Is Back on the Agenda. [www.booz.com](#)

009

Deloitte. John Rhodes et. Al. (2013). 2014 Global life sciences outlook. Resilience and reinvention in a changing marketplace

010

IBM.Heather Fraser et. al. (September 2013). Analytics across the ecosystem. A prescription for optimizing healthcare outcomes. [www.ibm.com](#)

011

IBM. Heather Fraser et. al. (2012). Benchmarking data reveals pharmaceutical industry not connecting social media data with marketing strategy. [www.ibm.com](#)

012

McKinsey and Company. Jamie Cattell et. al. (April 2013). How big data can revolutionize pharmaceutical R&D. [www.mckinsey.com](#)

013

McKinsey and Company. Hemant Ahlawat et.al. (2013). Beyond the storm. Launch excellence in the new normal. [www.mckinsey.com](#)

014

Earnst and Young. Kimberly Ramko et. al. (2014). Commercial excellence in Pharma 3.0. [www.ey.com](#)

015

Earnst and Young. Adlai Goldberg et. al. (2013). Managing regulatory and legal risk in the digital world. [www.ey.com](#)

016

A. T. Kearney. Oliver Scheel et. al. (2013). Mobile health: Mirage or growth opportunity? [www.atkearney.com](#)

017

A. T. Kearney. Chris Paddison et. Al. (2013). Digital healthcare or bust in US. [www.atkearney.com](#)

018

Bain and Company. Chuck Fargas et. al. (2012). The future of healthcare—there’s an app for that. [www.bain.com](#)

019

Capgemini. Tim Moore et. al. (2012). Multichannel Closed Loop Marketing. Digitally Transforming the Life Sciences Industry. [www.capgemini.com](#)

020

Boston Consulting Group. Peter Goldsbrough et. al. (2012). The Digital Dimension of Healthcare Report of the Digital Innovation in Healthcare Working Group 2012. [www.bcgperspectives.com](#)

021

Havas. (2012) My Body, Myself, Our Problem: Health and Wellness in Modern Times. [www.havasworldwide.com](#)

022

Havas. Larry Mickelberg. (2012). Gamification to Improve Healthcare Outcomes. [www.havasworldwide.com](#)

023

Juice pharma. Ben Putman. (2014). Top 5 Health 2.0 Trends for Pharma 2014. [www.juicepharma.com](#)

024

Juice pharma. Robert Palmer. (2014). SXSW 2014: Personalized Health, Coming to a Screen Near You [www.juicepharma.com](#)

025

Vertic healthcare. Mads Krogh Petersen (2014). Are You Pre-disease or Healthy? [www.vertic.com](#)

026

Vertic healthcare. Mads Krogh Petersen (2014). Are You Pre-disease or Healthy? [Www.vertic.com](#)

027

The cementbloc. Elizabeth Elfenbein et. al. (2013). You’ve Come a Long Way, Patient. [www.convergentimes.com](#)

028

The cementbloc. Andrew Marvel et. al. (2013). A Healthy Look at Opportunity. [www.convergentimes.com](#)

029

Klick Health. Klick Wire. (2014). Digital Life in 2025 - 15 Predictions. [www.klick.com](#)

030

Klick Health. Klick Wire. (2014). Pharma Can’t Ignore Patient Services. [www.klick.com](#)

031

Intouch Solutions. Chris Nelson. (2013). Pharma Content Marketing: Just Do It. [www.intouchsol.com](#)

032

Intouch Solutions. Faruk Capan. (2013). Pharma: The Bright, Shiny, Digital Future. [www.intouchsol.com](#)

033

Boomerang pharma. Mariana Frois. (2013). Are Pharma Industries Digital Enough? [www.boomerangpharma.com](#)

034

Publicis Healthcare Communications Group. Digitas Health. (2012). The Healthcare Marketer’s Guide to Going Mobile. [www.publicishealthcare.com](#)

035

Publicis Healthcare Communications Group. Publicis Touchpoint Solutions, Inc. (2012). What Physicians Want! [www.publicishealthcare.com](#)

036

K-Message. Piotr Wrzosiński. (2014). Top 5 pharma marketing trends in 2014. [www.k-message.com](#)

037

K-Message. Piotr Wrzosiński. (2014). How Quantified Self, mHealth and Wearable Technology are Changing Pharma Marketing. [www.k-message.com](#)

038

Ogilvy CommonHealth. Medical Marketing & Media. (2013). Healthcare Marketers Trend Report 2013. [www.ogilvychww.com](#)

039

Ogilvy CommonHealth. Robert Egert. (2014). SXSW 2014: Technology and Health. [www.ogilvychww.com](#)

040

Digital Health Coalition. Unknown author. (November 2013). 2013 Executive Landscape Study. [www.digitalhealthcoalition.org](#)

041

Manhattan Research. Monique Levy et. al. (2014). Pharma Multichannel Marketing Outlook: 14 Trends to Drive Growth in 2014. [www.manhattanresearch.com](#)

042

DT Associates. Tim van Tongeren et. al. (February 2014). Digital Excellence in the Global Pharmaceutical Industry in 2014. [www.pharmaphorum.com](#)

043

eMarketer. Unknown author. (October 2013). Healthcare and Pharma Digital Spend Rises, but Outlays Stay Low. [www.emarketer.com](#)

044

Forbes. David Shaywitz. (January 2013). Pharma’s Digital Health Strategy: Four Options. [www.forbes.com](#)

045

Forbes. John Nosta. (April 2013). Digital Health: Will Pharma Follow or Lead? [Www.forbes.com](#)

046

IMS Institute. Murray Aitken et. al. (January 2014). Engaging patients through social media Is healthcare ready for empowered and digitally demanding patients? [www.imshealth.com](#)

047

Addweek. Joan Voight. (September 2013). Welcome to the New Face of Big Pharma On eve of Obamacare, brands shift marketing from pill pusher to best friend. [www.addweek.com](#)

048

IMS Institute. Murray Aitken et. al. (March 2014). Riding the information technology wave in life sciences: Priorities, pitfalls and promise. [www.imshealth.com](#)

049

The New York Times. Katie Thomas. (May 2013). Pills Tracked From Doctor to Patient to Aid Drug Marketing. [www.nytimes.com](#)

050

Medical Marketing and Media. Unknown Author. (March 2014). GUIDE 2014. Digital Think Tank: A Work in Progress. [www.mmm-online.com](#)

051

Medical Marketing and Media. Zoe Dunn. (November 2013). Should pharma abandon social media? [www.mmm-online.com](#)

052

Medical Marketing and Media. Ross Fetterolf et. al. (December 2013). Should pharma abandon social media? [www.mmm-online.com](#)

053

Pharmatimes. Matt Lowe. (March 2014). The Internet of Things: say what? [Www.pharmatimes.com](#)

054

Forbes. Dan Munro. (March 2014). The View Of Digital Health From An ‘Engaged Patient’. [www.forbes.com](#)

055

Arthur D Little. Dr. Thilo Kaltenbach et. al. (2014). Impact of Digital Health on the Pharmaceutical Industry. Will Business Models be Reshaped by Digital Health? [www.adlittle.de](#)

056

Forbes. David Shaywitz. (June 2013). Future of Drug Development Focuses on Patient Experience - And Digital Health Tools Can Help. [www.forbes.com](#)

057

Across Health. Fonny Schenck. (2013). 2013 Digital Barometer for Life Science. [www.slideshare.com](#)

058

Couch. Ash Rishi. (January 2014). Survey finds 56% of pharma unsatisfied with digital strategy. [www.wearecouch.com](#)

059

Capgemini. Unknown Author. (2013). The Digital Advantage: How digital leaders outperform their peers in every industry. [www.ebooks.capgemini-consulting.com](#)

060

Digital Health. Paul Sonnier. [www.linkedin.com](#)

061

HIMMS. Cari McLean. [www.linkedin.com](#)

062

Innovations in Health. Korstiaan van Wyngaarden. [www.linkedin.com](#)

063

Healthcare-IT/ EHR/HIS. Dr Pankaj Gupta. [www.linkedin.com](#)

064

Pharmaphorum. Paul Tunnah. [www.linkedin.com](#)

065

Gartner. Jamie Guevara et. al. (2013). IT Key Metrics Data 2013: IT Enterprise Summary Report. [www.gartner.com](#)

066

UK Life Sciences Skills and Strategy Board. Nigel Brooksby. (2014). Chairman address. [www.eyeforpharma.com](#)

067

UCB. Lode Dewulf. (2014). The era of patient-centricity: Fashion or future?

068

Merck. Tyrone Edwards. (2014).Understand the direct link between client satisfaction and business performance - do we have the right sales model to deliver value in pharma? [www.eyeforpharma.com](#)

069

M3 Europe. Tim Ringrose. (2014). Great pharma marketing paradox. [www.eyeforpharma.com](#)

070

IMS Health. Kabir Shahani. (2014). Take the first step to make multichannel happen: Lessons from the front line. [www.eyeforpharma.com](#)

071

RAND. Søren Mattke. (2014). Understand the transition from pay per pill to pay for value means for your business model. [www.eyeforpharma.com](#)

072

Gedeon Richter PregLem. Haider Alleg. (2014). How to avoids pittfall in your digital strategy through the use of online mining. [www.eyeforpharma.com](#)

073

PA Consulting Group. Richard McIntyre. (2014). Unlocking commercial potential - making new business models work. [www.eyeforpharma.com](#)

074

Forbes. Dave Chase. (2014). Patient Engagement is the Blockbuster Drug of the Century. [www.forbes.com](#)

075

McKinsey and Company. David Edelman et. al. (2010). Beyond paid media: Marketing’s new vocabulary. [www.mckinsey.com](#)

076

Forbes. Jason Bloomberg, (2014). Digital Transformation Moves Pharma ‘Beyond the Pill’. [www.forbes.com](#)

077

Patientview. Unknown author. (2014). CORPORATE REPUTATION OF PHARMA – THE PATIENT PERSPECTIVE, FEBRUARY 2014. [www.patientview.com](#)

078

Edelman. Unknown author. (2014). 2014 Edelman Trust Barometer. [www.slideshare.com](#)

079

Manhattan Research. Unknow Author. (2013). Taking the pulse 2013. [www.manhattanresearch.com](#)

080

New York Times. Unknown author. (2013). Drug Marketers Use Social Network Diagrams to Help Locate Influential Doctors. [www.nytimes.com](#)

081

ePharma Summit: Will Pharma Ever REALLY Embrace and Understand Real World Online Patient Conversations? - See more at: [http://treato.com/blog](#)

082

Philly Pharma. David Sell. (2013). Glaxo’s Andrew Witty on CEO choices, financial guidance, smaller facilities and hiring people with heart

083

Bloomberg. Albertina Torsoli. (2013). Viehbacher Sees New Sanofi Growing in Diagnostics, Nutrition [www.bloomberg.com](#)

084

Wallstreet Journal. Marta Falconi. (2013). At Novartis, the Pill Is Just Part of the Pitch [www.online.wsj.com](#)

085

PwC. Michael F. Swanick. (2013). Dealing with disruption 16th Annual Global CEO Survey Key findings in the Pharmaceuticals and Life Sciences industry. [www.pwc.com](#)

086 PwC. Recapturing the vision* . Restoring trust in the pharmaceutical industry by translating expectations into actions. www.pwc.com

087 Wallstreet Journal. Jonathan D. Rockoff. (2011). Pfizer CEO Ian Read on Reputation, Risk and Resources. www.blogs.wsj.com

088 PwC. PwC Research Health Institute. (2012). Social media “likes” healthcare. From marketing to social business. www.pwc.com

089 PwC. (2012). 15th CEO Survey. www.pwc.com

090 Wallstreet Journal. Leslie. P. Norton. (2013). Embracing the J&J Credo. www.online.wsj.com

091 Yahoo Newsmaker. Byron Pitts et. al. (2014). Merck CEO Ken Frazier: ‘Whatever’s Best for Patients in the Long-term Is Best for Our Business’. www.news.yahoo.com

092 MMM. Michael Marino. (2014). Digital Think Tank: A Work in Progress. www.mmm-online.com

093 The Steam. Gregg Fisher. (2013). The Digital Native Physician in Europe. www.slideshare.com

094 American Diabetes Association. Charlene C. Quinn. (2011). Cluster-Randomized Trial of a Mobile Phone Personalized Behavioral Intervention for Blood Glucose Control. www.care.diabetesjournals.org

095 Pubmed. Charlene C. Quinn. (2008). WellDoc mobile diabetes management randomized controlled trial: Change in clinical and behavioral outcomes and patient and physician satisfaction. www.ncbi.nlm.nih.gov/pubmed

096 Pubmed. Clinical Nurses. (2007). A nurse short message by cellular phone in type-2 diabetic patients for six months. www.ncbi.nlm.nih.gov/pubmed

097 PwC. (2012). Emerging mHealth: Paths for growth. www.pwc.com

098 Indystar. Jill Philips. (2014). 5 questions with Eli Lilly’s John Lechleiter. www.indystar.com

099 ComScore. (2012). New Study on Physician Online Behaviors Shows Health Care Professional Sites Reach 4 out of 5 Physicians, While Electronic Medical Records Show Highest Engagement. www.comscore.com

100 Forbes. Dan Munro. (2014). Big Pharma Opens New Chapter On Big Data Collaboration. www.forbes.com

101 Forbes. Dan Munro. (2013). SAS And GSK Pull Big Pharma Into Big Data Collaboration. www.forbes.com

about valtech_

Valtech is a new breed of digital marketing and technology agency, with a global footprint in twelve countries (France, Germany, Denmark, Sweden, Switzerland, Spain, Ukraine, Australia, Singapore, India, the UK and the USA) and approximately 1.600 employees. As a full-service digital powerhouse, Valtech delivers value to its customers throughout every stage of their digital projects, from strategic consulting to design, conception development and optimization of business-critical platforms. Through its unceasingly renewed commitment to innovation and agility, Valtech helps global brands build business value and increase revenues through digital technologies while optimizing time to market and ROI.

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