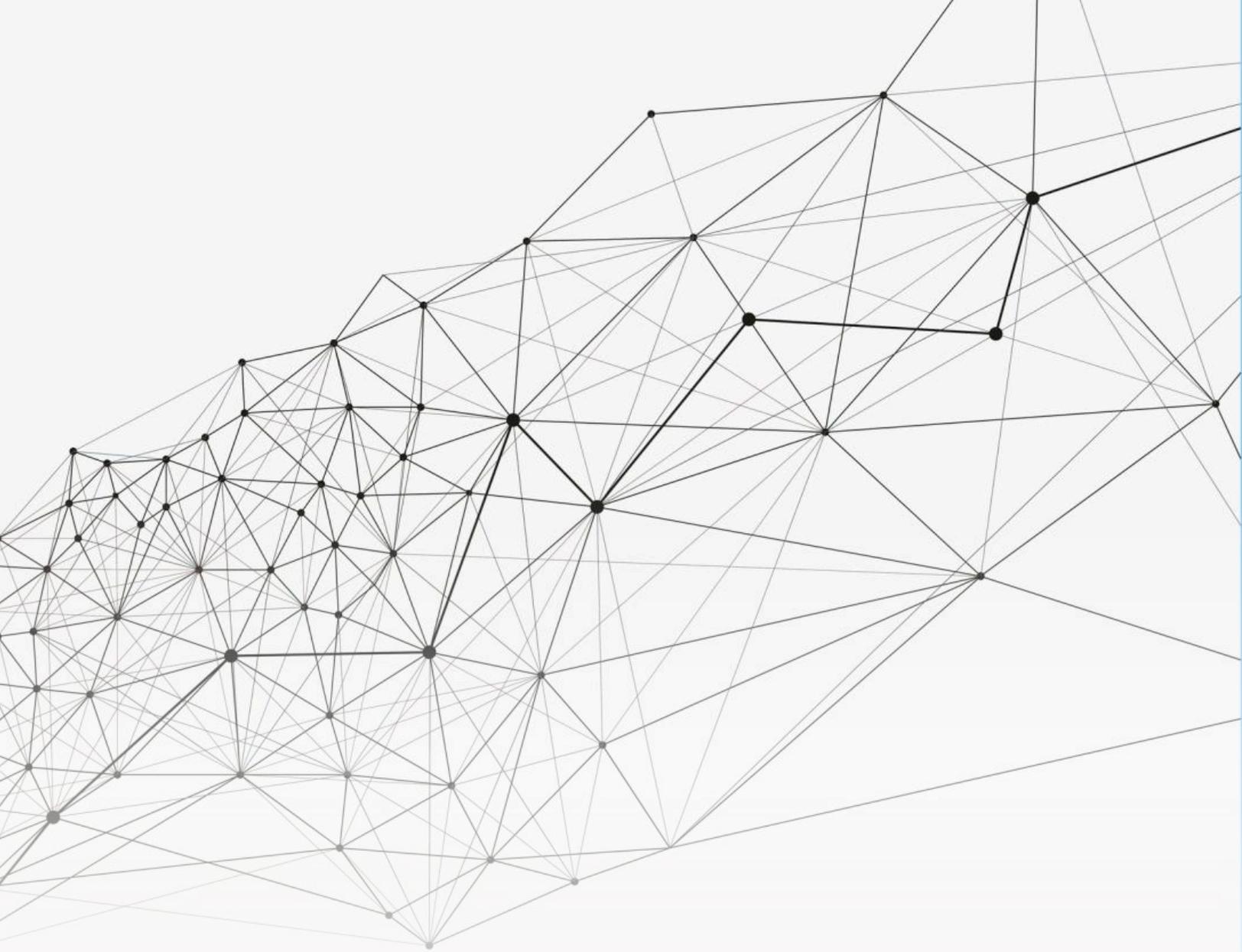




HOW ENTERPRISES ARE STEERING THROUGH DIGITAL DISRUPTION



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INTRODUCTION

Digital technologies continue to tear up the traditional rulebook for industries. Standards are being shaken and norms nullified as digital disruption spreads. This is already having a profound impact on the way organizations work, with more and more looking to deploy new technologies in the most effective way to grow and compete. Organizations that can evolve and embrace this fast paced, digital world that we live in are more likely to be successful. However, with the digital trends constantly changing, what might be an industry standard at one moment can be quickly superseded by the demands of certain users or functions the next. Simply striving to keep up might no longer be enough, as businesses need to lead the way with new technologies and next practices in their industries to be the best.

Infosys commissioned an independent market research company, Vanson Bourne, to investigate the use of digital technologies and key trends in nine different industries. To explore this in more detail, this report aims to discover:

- The surging tide of digital technology adoption in organizations – what is used and where?
- The promised land of digital technology use, and the hurdles organizations face to get there.
- The biggest disruptive digital trends within the next three years and why organizations see them as vital to future success.

KEY TRENDS BY SECTOR



AUTOMOTIVE

- According to the automotive companies surveyed, investing in technologies for digital supply chains (57%), environment-friendly automobiles (56%), and autonomous vehicles (56%) are the most common trends which will make a positive impact on their organization within the next three years.
- Artificial intelligence (71%), 3D printing (66%), and cyber security (57%) are the digital technologies being utilized the most by automobile companies today.
- Automobile manufacturers plan to invest in digital technologies in the next 12 months. Connected cars (67%), autonomous vehicles (66%), and digital supply chains (65%) are currently receiving investments from most enterprises who consider them a trend for the coming three years.
- Almost all automotive industry respondents said that their organization could improve both existing skills and technologies in preparation for implementing the top trends.

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BANKING

- According to the banks surveyed, the use of data analytics for deep personalization (54%), open banking application programming interfaces to facilitate collaboration within the ecosystem (50%), and paperless trade finance driven by blockchain and the Internet of Things (42%) are among the top trends over the next three years which will make a positive impact on their organization.
- Big data analytics (73%), cyber security (72%), and enterprise cloud (65%) are the three digital technologies being utilized most commonly by banks today.

- Banks plan to invest in digital technologies in the coming 12 months. It appears that the money will go towards known priorities, such as preventing fraud, improving customer experience, and channel innovation rather than the trends that will have the most positive impact on the business over the next three years.
- Respondents said that their organization could improve both existing skills and technologies in preparation for implementing the top trends of the coming three years.

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CONSUMER PACKAGED GOODS

- According to the consumer packaged goods (CPG) industry survey respondents, investing in technologies for automating the manufacturing process (61%), digital asset management (52%), improving supply chain visibility (49%), and deep product personalization (49%) are the most common trends which will make a positive impact on their organization within the next three years.
- Cyber security (69%), big data analytics (68%), and enterprise cloud (65%) are the three digital technologies being utilized the most by CPG companies today.
- CPG organizations plan to invest in digital technologies in the coming 12 months. Automation of manufacturing, workforce management platforms, and back office automation currently receive investments from most enterprises who consider them a trend for the coming three years.
- CPG respondents said that their organization could improve both existing skills and technologies in preparation for implementing the top trends of 2018 and beyond.

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HEALTHCARE

- According to the healthcare companies surveyed, investing in technologies for big data analytics for predicting risk and the onset of health problems (73%), electronic health record (EHR) systems modernization (57%), and remote hospital-like care delivery (49%) are the most commonly reported trends for the next three years which will make a positive impact on their organization.
- Cyber security (77%), big data analytics (72%), and artificial intelligence (59%) are the three digital technologies being utilized the most by healthcare companies today.
- Healthcare providers plan to invest in digital technologies in the coming 12 months. EHR systems (68%) and big data analytics (61%) are currently receiving investments from most companies who consider them a trend in the coming three years.
- A majority of healthcare respondents said that their organization could improve both existing skills and technologies in preparation for implementing the top trends of the next three years.

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INDUSTRIAL MANUFACTURING

- According to the industrial manufacturing companies surveyed, better cyber security (68%), using artificial intelligence (AI) and automation in the back office (45%), and supplying directly to consumers through e-commerce (45%) are the most commonly reported trends for the next three years which will make a positive impact on their organization.
- Cyber security (73%), big data analytics (65%), enterprise cloud (61%), and AI (54%) are the four digital technologies being utilized the most by manufacturing companies today.

- Industrial manufacturing enterprises plan to invest in digital technologies in the coming 12 months. Industrial Internet of Things (71%), 3D printing of spare parts (68%), AI/OCR (optical character recognition) for vendor and staff contract management (67%), and cyber security (67%) have already received investments from most companies who consider them a trend for the coming three years.
- A majority of respondents said that their organization could improve both existing skills and technologies in preparation for implementing the top trends of 2018 and beyond; budget was not a big problem.

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INSURANCE

- According to the insurance companies surveyed, big data for customer insight and wallet share (50%), cyber security for data protection and compliance (50%), artificial intelligence (AI) for underwriting automation (48%), and technology for business rules extraction (48%) are the most commonly reported trends for the next three years which will make a positive impact on their organization.
- Cyber security (66%), big data analytics (65%), enterprise cloud (58%), and AI (45%) are the four digital technologies being utilized the most by insurance companies today.
- Insurance providers plan to invest in digital technologies in the coming 12 months. Cyber security and gamification have received investments from the most respondents' companies (74% each), while 63 percent of the respondent organizations have invested in big data and 56 percent in AI.
- A majority of the respondents (86%) said that their organization could improve both existing skills and technologies in preparation for implementing the top trends of the next three years; budget was a problem for 56 percent of the companies in the survey.

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LIFE SCIENCES

- According to the life sciences companies surveyed, improving cyber security (64%), using cloud-based technologies (54%), and fostering industry collaboration (47%) are the top trends which will make a positive impact on their organization within the next three years.
- Big data analytics (71%), cyber security (64%), and artificial intelligence (62%) are the most common digital technologies being utilized by life sciences companies today.
- Life sciences organizations plan to invest in digital technologies in the coming 12 months, but not all investments are in the top trends: 76 percent of those who consider it a trend over the next three years were investing in technologies to improve cyber security for protection of patient and trial data.
- A majority of respondents said that their organization could improve both existing skills (86%) and technologies (87%) in preparation for implementing the top trends within the next three years.

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RETAIL

- According to the retailers surveyed, aligning marketing, promotion, and offer spends using data analytics (52%), using technology to increase customer convenience (50%), and investing in retail workforce management technology and platforms (47%) are the most commonly reported trends for the next three years which will make a positive impact on their organization.
- Cyber security (74%), big data analytics (66%), and enterprise cloud (62%) are the three digital technologies being utilized the most by retailers today.

- Retail organizations plan to invest in digital technologies in the coming 12 months. Augmented reality, point of sale/in-store experience, and analytics for aligning marketing spends currently receive investments from most enterprises who consider them a trend for the coming three years.
- Retail respondents said that their organization could improve both existing skills and technologies in preparation for implementing the top trends within the next three years.

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UTILITIES

- According to the utility companies surveyed, improved cyber security (66%), consumer analytics (54%), omnichannel customer engagement (51%), and digital field operations (51%) are the most commonly reported trends for the next three years which will make a positive impact on their organization.
- Cyber security (70%), enterprise cloud (66%), and big data analytics (63%) are the three digital technologies being utilized the most by utility companies today.
- Utility providers plan to invest in digital technologies in the coming 12 months. Omnichannel strategy is being invested in by most companies (69%) who consider it a trend for the coming three years. Sixty-one percent of the respondent organizations have invested in cyber security and 50 percent in customer analytics.
- A majority of respondents said that their organization could improve both existing skills (80%) and technologies (85%) in preparation for implementing the top trends over the next three years; budget was a problem for 45 percent of the companies in the survey.

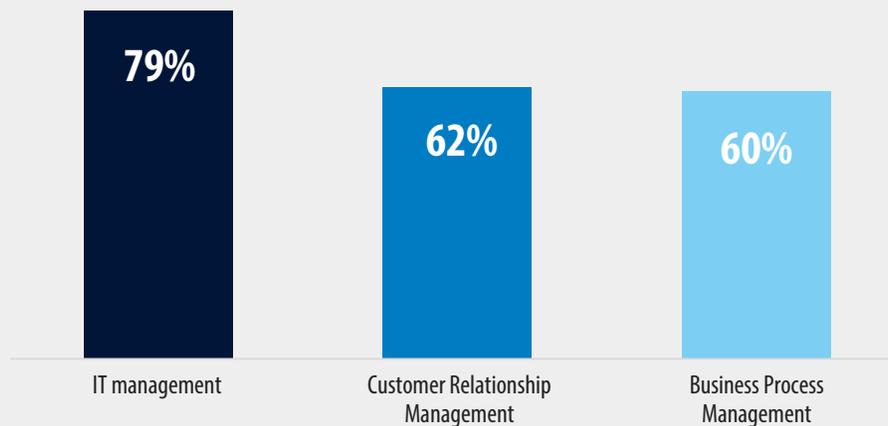
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ADOPTION OF NEW TECHNOLOGIES

There is high demand for organizations to adopt new digital technologies and strategies to not only keep up with competitors, but also to stay ahead in their industry. But technology also shines in the back office. According to the respondents in our quantitative study, digital

technologies are used across a variety of areas within their organization, most commonly in IT management (79%), customer relationship management (62%), and business process management (60%).

AREAS IN WHICH DIGITAL TECHNOLOGIES ARE UTILIZED



Analysis of areas that the respondents' organizations utilize digital technologies in. Base comprises all the respondents (1,000).

"To be on top of the market, we need to follow and create trends, and for this, we need to leverage new technologies."

“I think it comes back to whichever technology can make our existing technology either work better or supersede it.”

However, it doesn't end there. There are more areas where the respondents' organizations would like to utilize digital technologies, if they haven't already, including knowledge management (33%), operational intelligence (31%), and product development (28%). Digital technology adoption continues to spread throughout the organization.

Bearing in mind the areas where digital technologies are used, it is not surprising that the most common types of technologies currently utilized by the respondents' organizations are cyber security (69%), big data analytics (67%), enterprise cloud (60%), and artificial intelligence (56%). Organizations are looking to harness technology's processing power but remain reliant upon its ability to protect. But what are the benefits to an organization adopting new technologies? One qualitative respondent outlined

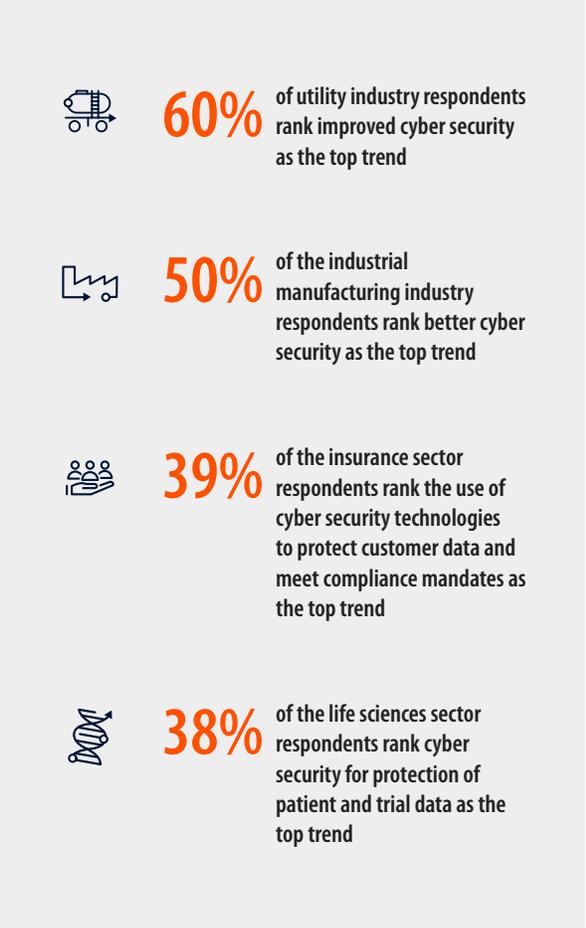
that it is key to be able to maintain a good level of optimized cost to be profitable, train people, and also to have mature processes. This is echoed in the quantitative results with the respondents globally reporting greater efficiency (64%), business growth (56%), and increased productivity (56%) as benefits that their organization has seen from the adoption of digital technologies. Conversely, technology is exposing both new opportunities and new risks to organizations – it is essential to address the latter to achieve the former. What digital technologies or trends should organizations focus on to ensure that they are on top of the market?

CYBER SECURITY

As digital technologies become more and more prevalent within organizations, the dependence and reliance on them is increasing. Cyber-crimes are increasing at a rapid rate and generating significant negative media and consumer exposure, such as in the case of large, worldwide cyber attacks like WannaCry. Therefore, it is not surprising that technologies for cyber security will have a positive impact on the respondents' organizations in the next three years, for a number of industries:

With more and more data being stored, the need for better cyber security is rapidly increasing. For example, if the utilities industry was affected by a cyber security breach, it could have huge ramifications if customers had power outages for a few days. However, the need for better cyber security could also be due to the increasing awareness around vulnerability or because of heavy regulations.

This is a common theme emerging throughout these sectors in the qualitative results with one respondent in the insurance sector saying,



“It’s something that we here at [our organization] have been heavily investing in and engaged on for five or more years. I believe that we, as an organization, and as an industry, have to be on the forefront on cyber security. So I would say, if you want to call it a trend, I would put it absolutely on top of the list. I believe it’s past a trend and it’s table stakes, you know.”

“It’s something we address on a continuous basis. The struggle that we have internally is really dealing with the regulatory bodies and how we align the technologies and the needs of the security platform to make this thing happen... it’s this continuous cycle that’s evolving. It’s a big thing on our horizon.”

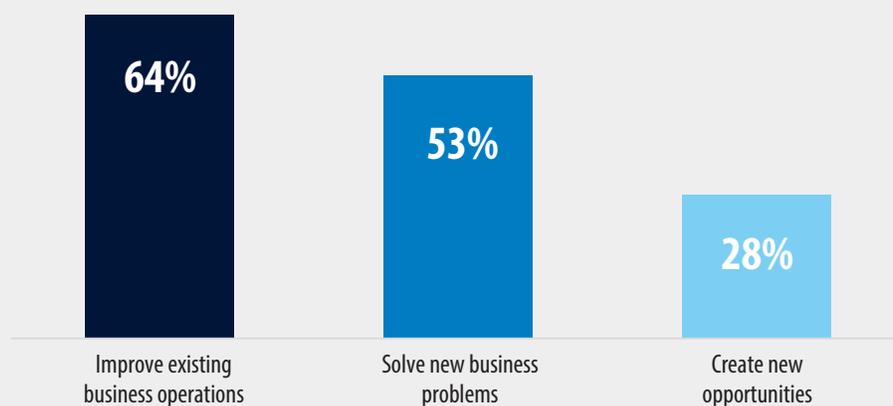
With that in mind, almost two thirds (64%) of the respondents’ organizations in the online study implemented cyber security within their organization to improve existing business operations, over half (53%) to solve new business problems, whereas less than three in 10 (28%) implemented cyber security to create new opportunities.

Cyber security for protection of patient and trial data is seen as a top trend for the respondents in life sciences, with 38 percent stating it will have the most positive

impact on their organization in the next three years. Awareness of this has drastically increased over the last few years, particularly after attacks like WannaCry.

Although cyber security technologies exist in most organizations today, as cyber-crimes are developing, new technologies and methods are evolving to overcome these changes. The importance of cyber security is clear within the findings of the research and is seen by most organizations as a necessity for investment, despite its long-standing presence.

INTENTION WHEN IMPLEMENTING CYBER SECURITY



Analysis of cyber security when implemented within the respondents’ organizations with the aim of improving existing business operations, solving new kinds of business problems, or creating new opportunities. Base comprises the respondents who have implemented cyber security technologies (692).

THE GROWTH OF DATA AND HOW IT IS USED

The amount of data being collected by organizations is on the rise and will continue to grow. However, the data may not always be used in the most effective way to provide a significant benefit to the organization. As one respondent in the automotive industry outlined, it can even be something as simple as:

“Just trying to find information within your own organization ... when you’ve got so much information, it’s sometimes a bit difficult.”

The benefit of using data and data analytics for the success of organizations is becoming more apparent, with the same respondent indicating that it will increase productivity, will lead to a higher level of quality control, inventory control, and production flow.

Insights into customer behavior, consumption, and efficiencies are important to provide an enhanced experience for the customer. Over four in 10 (41%) respondents in the banking industry believe that data analytics for deep personalization of products is one of the top trends that will have the most positive impact on their organization within the next three years. Analytics will allow organizations to know what

is of interest, when it is of interest, what the customers’ habits are, and ultimately, predict what they are going to do next. Being able to personalize products and services may mean that customers are more likely to use them. However, one respondent outlined a challenge their organization is experiencing:

“It’s a case of at the moment the system having more capability than us having the resource internally, by way of person and capability, to fully leverage it.”

For this respondent and the organization, the desire to adopt more sophisticated analytics is clear, but it’s actually their own skills and the ability to handle this technology that is proving a problem.

The importance of understanding customer behavior is also apparent within the utilities sector with over a third (35%) of the respondents believing that investment in consumer analytics is one of the top three trends that will have the most positive impact on their organization within the next three years. Consumer analytics is predictive analytics based on slicing and dicing of customer complaints/issues from various sources, such as call centers and social

media, combined with complex, rule-based what-if algorithms for rate analysis to ensure control over customer churn as well as to empower customers to be in control. It also requires digitization of self-service features for rate simulation, seamless enrolment, and personalized tariffs for customers. In the qualitative element of the study, one respondent explained that their organization has two vertical business units, and as they work for one, they do not know what services the other offers. Without currently having any analytics for the cross-selling of the products, as an organization, they are very serious about investing in analytics. To do this, not only is internal cleansing and setting baselines required, but then once the data is there, actually establishing how to utilize it efficiently will be a challenge.

The growth of data and how it is used is also developing within the retail sector, with the potential of data analytics providing a better service. Within the online research, almost half (46%) of the retail respondents believe that aligning marketing campaigns and offers program spending with data analytics is within the top three trends that will have the most positive impact on their organization within the next three years. For example, points based reward cards are often used to track customers' purchases, allowing organizations to tailor offers and even ensure if the product is in store. In the qualitative element, a respondent outlined their organization's aim:

"[Our] target is to go as much and as relevant as necessary to serve customers that are known to the organization, almost on a very individual level in terms of proposals and also in terms of pricing."

All respondents (100%) from organizations in the retail sector who believe that aligning marketing campaigns and offers program spending with data analytics will have a positive impact on their organization are investing in (70%), planning to invest in (25%), or are at least investigating (6%) this trend. A decade ago there was almost no customer data available, whereas today that is a major source of knowledge that a company depends on.

Deeper analytics and more robust insights can be translated into better customer segmentation, marketing, offers, and experiences. Not only can this mean that customers receive personalized marketing, but these capabilities may lower the costs of customer acquisition, raise individual wallet share, and increase retention – meaning more profit and positive corporate results. For respondents in the insurance sector organizations, the use of big data for a 360-degree view of the customer and to increase wallet share (38%) is seen as one of the top three trends that will have the most positive impact on their organization within the next three years. However, in the qualitative element, one respondent outlined their reservation, and believes that more is needed:

"To say that big data means we can get more wallet share is foundational to that conversation, but I don't think it's enough. I think more will be needed to get more wallet share. I think probably the most important thing to get more wallet share will actually be an improved consumer experience."

Ultimately, this respondent is suggesting that the act of collecting data alone is not enough. Understanding and using that data effectively to evolve into positive experiences for the customer will be what makes the difference.

In the retail industry, 39 percent of the respondents believe that investments in data and insights, for both efficiency of channel and to sell more, is one of the top three trends that will have the most positive impact on their organization within the next three years. Data mining and data analytics should lead to customer insights. One respondent within the qualitative element details that their organization is already using key performance indicator (KPI) reports to generate insights. The reports can be used to make sure there is stock available in the store that can be sold, and the organization will not have the issue where the products are out of stock and would mean business loss.

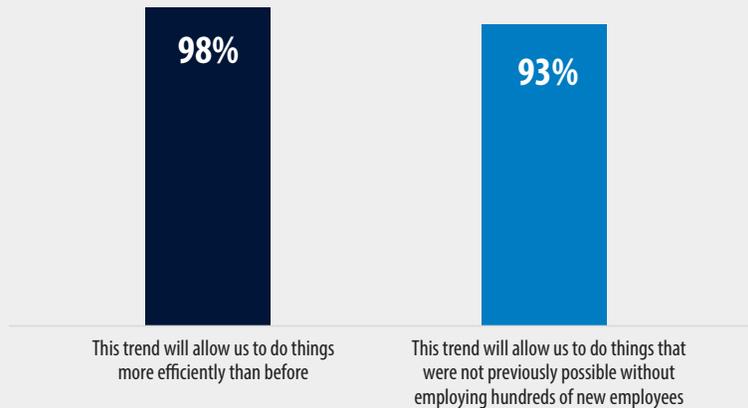
In the quantitative part of the study, almost four in 10 (37%) respondents within the life sciences sector cite the use of cloud-based technologies to improve data and data analytics flexibility and efficiency as one of the top three trends that will have the most positive impact on their organization within the next three years. In the qualitative results, although the use of cloud-based technologies did not naturally emerge, one respondent said, "The next big thing is really looking at analytics". The improved use of data and data analytics could aid life sciences customers in building their relationships with the government, payer, provider, patient, and the caregiver. This is done by deriving inferences using data from health plan networks, providers, and from various systems like customer relationship management (CRM), contracts, supply chain, and finance. This is mirrored by a respondent:

Another key finding within the life sciences industry is that the safety of drugs could be improved by improving data ingestion, data quality, and including data from mining literature and social media – with almost three in 10 (29%) respondents ranking this within the top three trends that will have the most positive impact on their organization within the next three years. This is echoed in the qualitative data, with a respondent saying, "The safety of the drug or the efficacy of the drug is massively important". However, organizations are still asking key questions to be able to address this trend, with the same respondent asking, "How best through digital can we impact medical and research and development within the organization? What can be done from a clinical trials perspective and how do we bring that information out further, and deeper and richer?"

The use of data and data analytics to ascertain trends and develop algorithms is also seen as important within the healthcare industry. The most common (65%) rated trend within the respondents' top three that will have the most positive impact on their organization within the next three years is big data and analytics to track patient behavior, learn risk patterns, and predict the onset of unfavorable health conditions. Almost all (98%) respondents in the healthcare sector agree that big data and analytics to track patient behavior, learn risk patterns, and predict the onset of unfavorable health conditions will allow their organization to do things more efficiently than before. Additionally, over nine in 10 (93%) say it will allow their organization to do things that were not previously possible without employing hundreds of new employees.

"We're really looking at it for seeing what's the next evolution of big data. How do we make it more palatable? How do we make it more user-friendly to not the experts, but everybody in the playing field? Those are the big things that we're looking at."

OPINION WITHIN THE HEALTHCARE INDUSTRY ON BIG DATA AND ANALYTICS



Analysis showing agreement of above statements by the respondents who believe that big data and analytics to track patient behavior, learn risk patterns, and predict the onset of unfavorable health conditions will have a positive impact on their organization in the next three years. Base comprises respondents within the healthcare sector who rank big data and analytics to track patient behavior, learn risk patterns, and predict the onset of unfavorable health conditions first (46).

This kind of data, along with social media data to track patient behavior (for example, drinking too much, visiting the gym), can also be studied to ascertain trends and develop algorithms that can predict the onset of a potentially dangerous condition for a patient, and to prevent it. It can also be used to study risk patterns in a particular geography, population, etc. This is reiterated by one respondent who outlined that although there may be an idea that certain behavior correlates to certain diseases through the medical books, there is no real in-depth understanding – using digital technology, such as big data, would contribute to our knowledge. Ultimately, not only could this save lives, but also reduce the impact on emergency services,

and therefore the cost. Of those in the healthcare sector that see big data and analytics as a key trend, the respondents estimate a 14.05 percent increase, on average, in their organization's global annual revenue as a result of using big data and analytics to track patient behavior, learn risk patterns, and predict the onset of unfavorable health conditions.

By using digital technologies, the growth of data can provide new opportunities. However, what is happening within these organizations to improve current challenges that they are facing? Is this use of data enough?

“Just having the data available is likely, in a lot of cases, not enough. The combination of big data with artificial intelligence and machine learning, that’s where I think the true impact is going to come to light.”

MODERNIZATION OF PROCESSES

Digital technologies can also improve current business processes. This can better support organizational objectives and, as a result, increase revenue/profit and improve customer satisfaction. The need to make organizations as flexible and agile as possible to keep up with trends emerging in each industry is becoming crucial to success. By modernizing processes, is this more achievable?

For some organizations, this is a priority, as outlined by a respondent in the automotive industry:

“Anything we can do to help us get the product design right the first time, in a shorter period of time, then that’s probably our number one priority from a digital point of view.”

It is seen as a key trend within the automotive industry to invest in digital supply chain, with 45 percent of the respondents ranking it among the top three trends that will have the most positive impact on their organization within the next three years, with a quarter

(25%) ranking it first. Of those that see investments in the digital supply chain as a key trend, the respondents estimate a 16.30 percent increase, on average, in their organization’s global annual revenue as a result of improving this.

However, this is not without challenges. The automotive industry has moved from manual, hands-on labor to robotic process automation (RPA) and now needs to develop further to even more sophisticated technologies. With technology constantly evolving, it is more difficult to implement within organizations, especially when considering that access to the right technical skills is a challenge for 62 percent of the respondents’ organizations from the automotive sector. A majority of the respondents that rank investments in digital supply chain as the number one trend agree that their organization could improve the technologies (96%) and skills (96%) to implement this, which was echoed by one respondent:

“You need to have well-trained people to be able to use the tools correctly.”

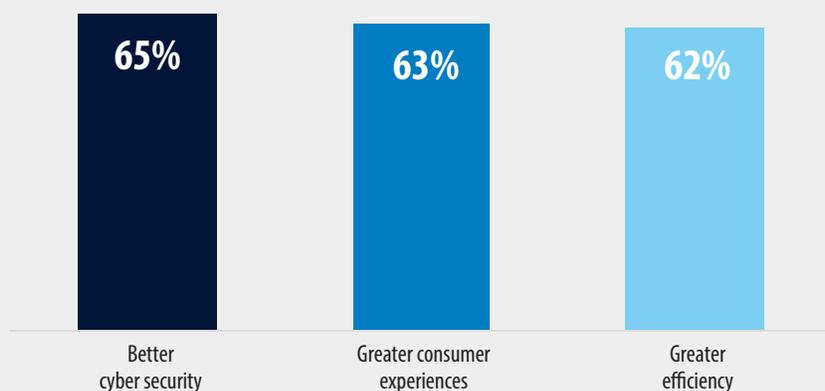
The modernization of processes can also have a huge impact within the consumer packaged goods (CPG) sector. If organizations were to invest in technologies to increase supply chain transparency, not only can this mean that the parts, the components, or the products in transit can be tracked from the manufacturer to their final destination, but it can potentially mean that the reverse flow is tracked as well. This enables the manufacturer to make the necessary changes as opposed to waiting until the product has crashed in the market and it is too late to make any changes to the product. Almost four in 10 (39%) respondents from within the CPG industry cite investment in technologies to increase supply chain transparency as one of the top three trends that will have the most positive impact on their organization within the next three years. By the respondents in the CPG sector, some of the biggest benefits seen from adopting digital technologies are greater consumer experiences (63%) and greater efficiency (62%), which are likely to also be the benefits of increasing supply chain transparency.

One respondent outlines that their organization has already invested a lot around this to provide consistent reporting of the performance measures for biometrics, KPIs for the factories. It's also to have better visibility

and global comparison of these factories as well as to better understand what the loss rates are, what the defects are in these sorts of factories, and see if the platform can serve as a way for different people across the world to learn from each other.

It is not only supply chain transparency that is seen as a priority within the CPG sector, but also investments in technology for digital asset management. Almost four in 10 (39%) respondents cite it as among the three trends that will have the most positive impact on their organization within the next three years. By investing in technologies for digital asset management, not only is there the potential to improve issues with seasonality, partner demands, and opportunities to sell directly to the consumer, but it may also aid with scalability. For example, if a celebrity endorses/mentions a product on social media, organizations will be better equipped to deal with the increased demand – an advantage of becoming a more flexible and agile organization. There is more pressure on organizations to take better control of the core assets that underpin all the stories their marketers are trying to tell. So for organizations in the CPG industry, investing in technology for digital asset management will aid this.

OPINION WITHIN THE CPG INDUSTRY ON BENEFITS FROM THE ADOPTION OF DIGITAL TECHNOLOGIES



Analysis showing benefits that the respondents have seen from the adoption of digital technologies in their organization. Base comprises respondents within the CPG sector (109).

Within the healthcare industry, the EHR systems currently do not have the functionality to measure and track a number of components (for example, pay-for-performance contractual arrangements), which, if adapted, could provide more flexibility and efficiency within the sector. Over four in 10 (43%) respondents in the quantitative study believe that improving and modernizing EHR systems is among the three trends that will have the most positive impact on their organization within the next three years. This is reflected by one respondent in the qualitative element who states that it is something that their organization looks at, on a yearly basis – upgrading, updating health records and their patient record system. Results have not only highlighted the importance of modernizing the EHR systems, but also EMR (electronic medical reports) that can be used for future advances in medical science or research. Another respondent in the qualitative results outlines that within their organization, a huge modernization was needed in terms of fundamental IT systems to enable more of a productive and stable platform. Does this mean that the healthcare sector may be slightly behind others in terms of modernization of processes?

That being said, another emerging trend that the healthcare industry respondents believe will have a positive effect on their organization within the next

three years is hospital-like care delivered remotely outside of the hospital (34%). It is apparent from the qualitative results that hospital-like care can be interpreted in different ways. One respondent described it as ‘reaching the community’ through video consultations and doctors/clinicians having access to data while away from the hospital. Another respondent, at a specialty hospital, remotely delivers expert advice to other healthcare professionals rather than providing care to the patient directly. In the online research, of those who see hospital-like care delivered remotely outside of the hospital as a trend that will have the most positive impact on their organization in the next three years, the healthcare respondents estimate a 12.44 percent increase, on average, to their organization’s global annual revenue.

Similarly, to the organizations within the CPG sector, modernization of some processes will drastically improve efficiency and flexibility for the respondents’ organizations within industrial manufacturing. 3D printing of spare parts is one of the top three trends that will have the most positive impact on their organization in the next three years with almost a third (30%) of the respondents stating this. For organizations that are able to utilize 3D printing of spare parts, it may mean bypassing the suppliers entirely – one respondent said:

OPINION WITHIN THE HEALTHCARE INDUSTRY ON THE IMPACT OF HOSPITAL-LIKE CARE DELIVERED REMOTELY OUTSIDE OF THE HOSPITAL



Average estimated percentage change that **hospital-like care delivered remotely outside of the hospital** could have on respondents’ organization’s global annual revenue

Analysis showing the average estimated impact that hospital-like care delivered remotely outside of the hospital could have on the global annual revenue of the respondents’ organization. Base comprises respondents within the healthcare sector who believe that hospital-like care delivered remotely outside of the hospital will have a positive impact on their organization in the next three years (39).

“[3D printing is] a big benefit not only for sales, but also for guarantees, and also to have examples of the things that are required.”

This will also enable suppliers to make and send parts on an on-demand basis, and do so locally, close to where the parts are needed (if organizations are unable to do this in-house). From the qualitative results it is clear that some organizations have already proved this is possible – one organization is currently using 3D printing for their samples, finding that it is helping on low quantity parts, to save costs as you go.

Currently, customer interactions in the utilities industry can be fairly basic and highly transactional in nature. So it isn't surprising that over four in 10 (41%) respondents in the utility organizations believe that the adoption of tech-driven broad omnichannel customer engagement strategy is one of the top three trends that will have the most positive impact on their organization in the next three years. This is emphasized in the qualitative results with one respondent saying:

This may be due to the fact that the customer engagement profile that most utility companies have is a very traditional profile. From what is described by one respondent, utility organizations supply a product through a fixed and highly expensive asset distribution or service product distribution network. They pass on historical costs through a very set pricing mechanism.

As mentioned in the cyber security section, it's a heavily regulated and highly protected sector with strong evidence of ongoing monopolies. However, that is no longer the expectation of consumers in the current world, which is proving to be a challenge when attempting to modernize this process: “How do we deal with Uber in an environment like ours? How do we move from the heavily regulated and highly protected industry, where, you know, we force customers down a certain path and impose costs on customers, to where they are not willing to do that anymore? No one has the answer at the moment.”

Previously, the modernization of field operations was seen as a way of eliminating paper and automating repetitive low value tasks. However, due to the increasing customer expectations, and a more digitally aware workforce, there is a requirement for utility organizations to make investments in technologies. Over a third (36%) of the respondents in the utility organizations believe that investments in enabling digital field operations is one of the top three trends that will have the most positive impact on their organization in the next three years. This can include expanding the use of consumer device form factors (for example, smartphones and tablets), delivering more data to the operator, and moving to higher speed communications infrastructure. However, again, the main constraint for organizations moving more and more into digital field operations appears to be industrial relations constraints.

The modernization of processes using digital technologies is drastically changing the way organizations work, across all sectors. Are organizations taking this one step further by using automation to improve efficiency?

“[The adoption of tech-driven broad omnichannel customer engagement strategy is] the one the organization is doing a lot of work in. Are we on top of it? Do we understand the fast-forward at this stage? No.”

AUTOMATION AND COLLABORATION

Not only is there the potential to modernize processes within sectors, but there is also the capability to automate and collaborate using digital technologies, which is outlined in some of the trends that will have the most positive impact on the respondents' organizations within the next three years:



By automating the manufacturing process within the CPG sector, there is the possibility of providing greater efficiency, increased productivity and, in turn, growth. However, there are varied views in the qualitative results on whether this is a past trend or the one to focus on in the next three years. One respondent believes that complete automation of manufacturing is going to take time within their organization, but it is their main focus – their organization is moving towards a human in the loop for building automation tools and technologies.

Artificial intelligence (AI) is becoming more prevalent within organizations with over half (56%) of the respondents' organizations in the quantitative element currently using it. Within the qualitative results, one respondent in industrial manufacturing outlines that AI and automation for the manufacturing back office would provide value and can aid organizations in reducing headcount – with AI controlling a system which was originally controlled by an employee. However, their organization is not currently utilizing AI and outlines their concern:

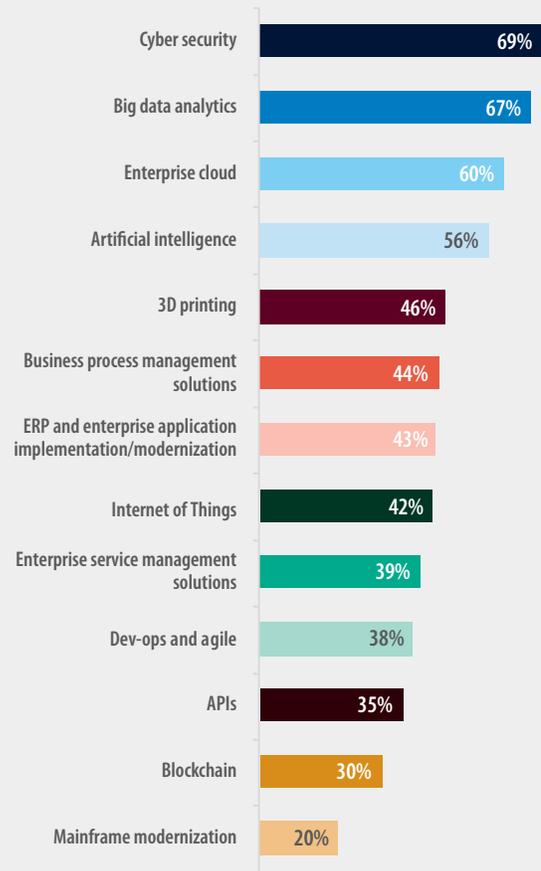
“You always lose a little of the human touch, and that’s always the question - how far will you let AI go?”

As we saw in the sections above, in the use of data and the modernization of processes, digital technologies are providing ways of recording and analyzing medical data. These technologies can also be used with insurance products to update risk calculations, immediately providing more accurate underwriting outcomes for the insurer, and also encouraging healthier behaviors among the insured. This may be a contributing factor as to why intelligent automation of underwriting with AI technologies or new underwriting software (38%) is among the top three trends that will have an impact within the insurance sector in the next three years.

Within the banking industry, by providing open banking APIs, organizations can increase collaboration with other industry players and accelerate innovation – almost two in five (38%) rated this among the top three trends that will have a positive impact in the next three years. However, one respondent highlights the challenge in implementing this:

“There is a level of trepidation around being fully transparent on that [AI] just in case someone gets the upper hand.”

DIGITAL TECHNOLOGIES USED WITHIN THE RESPONDENTS' ORGANIZATIONS



The digital technologies organizations currently utilize. Base comprises all respondents (1,000).

Technologies like the Internet of Things (IoT) (42%) and blockchain (30%) are being used within organizations.

Within the banking industry, these could be used to evolve current processes and provide the opportunity to collaborate. By collaborating with technology partners, organizations in the banking industry have the potential to provide paperless trade finance to implement solutions using blockchain and IoT – over a third (34%) of the respondents in the banking sector believe this is among the top three trends that will have the most positive impact on their organization in the next three years.

CONCLUSION

When it comes to being digital, the question is no longer 'if' but 'when' – and speed is vital for organizations to survive. The pressure is two-fold. First, industries are increasingly being disrupted by new entrants with digital technology at the heart of their business. The rules of the game are changing and traditional players are being dislodged from positions of comfort and familiarity. Secondly, with digital technologies becoming more commonplace in organizations, and more hype and emphasis being placed on 'becoming digital', there is an ever-increasing pressure on organizations to be 'more' – more responsive, more open, and more efficient. For many, the journey will prove difficult, but for those that can adapt, the benefits will be significant.

With the advancement in digital technologies allowing organizations to collect and analyze data to a degree that previously was not possible, new ways of improving flexibility and efficiency are developing within organizations, and with them, the potential to open up new growth areas and revenue streams.

Whether it be to provide a better, more personalized service to customers/consumers or whether it is used to ascertain trends and develop algorithms to improve knowledge and target more effectively, the possibilities (and potential benefits) are endless.

And it doesn't stop there. Digital technologies are also being used to reassess and revolutionize existing processes to quickly react to the constantly changing trends and needs. By accelerating business activities, successful digital organizations are benefiting from lower costs, increased revenues, and business growth, and therefore providing a positive change for consumers/customers. A true win-win scenario.

But there are a vast array of digital trends emerging. Establishing which are really important within each sector hugely depends on where an organization is currently placed and what they hope to achieve. Organizations must put actions to words and embrace new technologies to evolve to being truly digital.

SCOPE OF RESEARCH

Infosys commissioned Vanson Bourne to undertake the research that this report is based on.

In October and November 2017, the quantitative study was carried out, interviewing 1,000 senior IT and

business decision makers in organizations that use digital technologies. Respondents came from Australia (100), China (100), France (100), Germany (100), India (100), UK (200), and the US (300).

Respondents were from organizations with 1,000 employees or more and US\$500 million global annual revenue or higher. The respondents had to be from organizations who work within one of the following sectors:



Automotive



Banking



CPG



Healthcare



Industrial manufacturing



Insurance



Life sciences



Retail



Utilities

The interviews were conducted online, using a rigorous multi-level screening process to ensure that only suitable candidates were given the opportunity to participate. The results discussed are based on the total sample or by sector.

In December 2017, an in-depth qualitative study was undertaken, formed using the results from the quantitative research. Twenty people were interviewed,

from organizations with 1,000 employees or more and US\$500 million global annual revenue or higher, from the same sectors and countries outlined above for the quantitative research. These respondents were either IT decision makers or business decision makers within their organization, and their organization uses digital technologies. All quotes throughout this research are taken from that portion of the study.

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**NOTE: Throughout this document, when a trend is referred to it is the combination of responses ranked first, second, and third when asked which of the following trends will have the most positive impact on the respondents' organizations within the next three years, unless stated otherwise.*



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