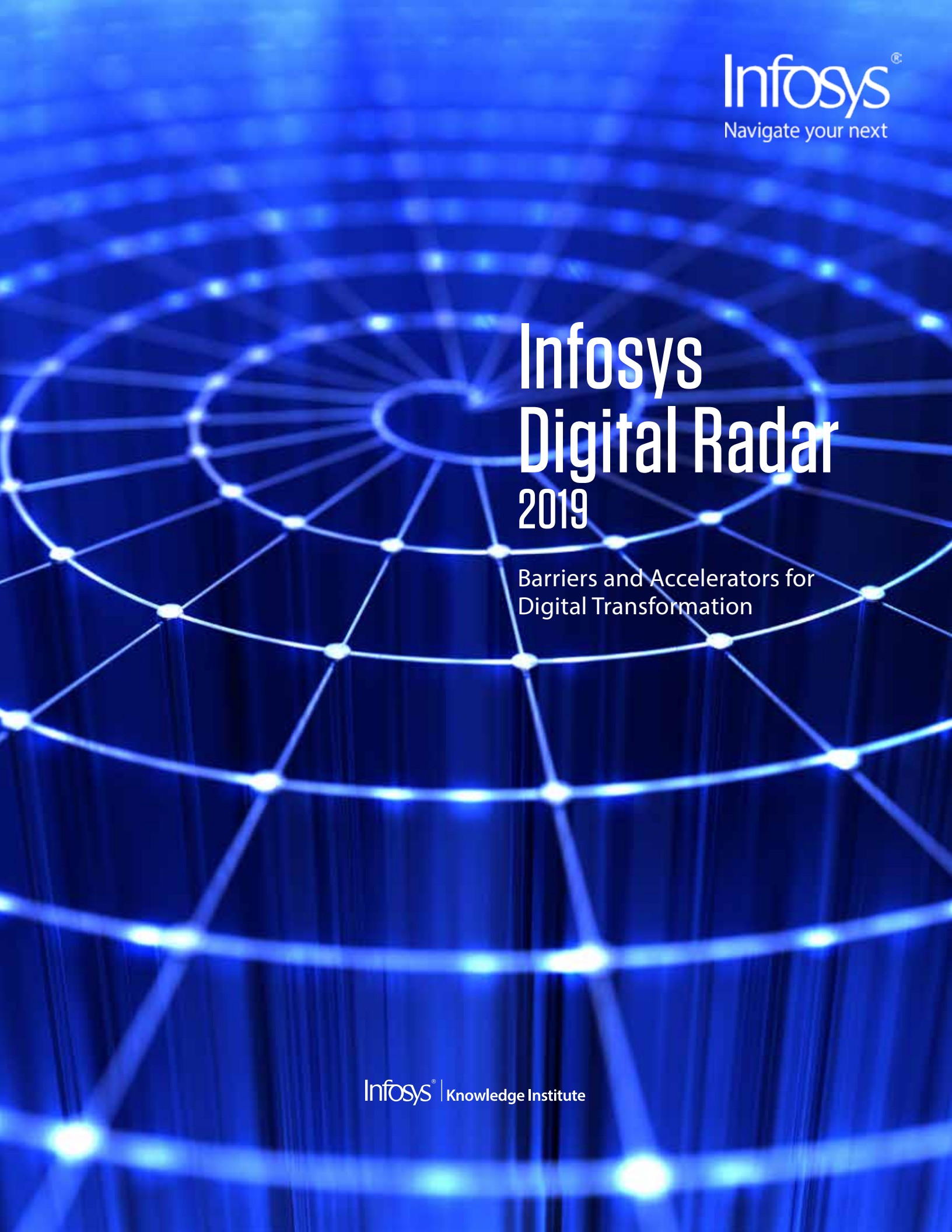
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Barriers and Accelerators for
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Contents

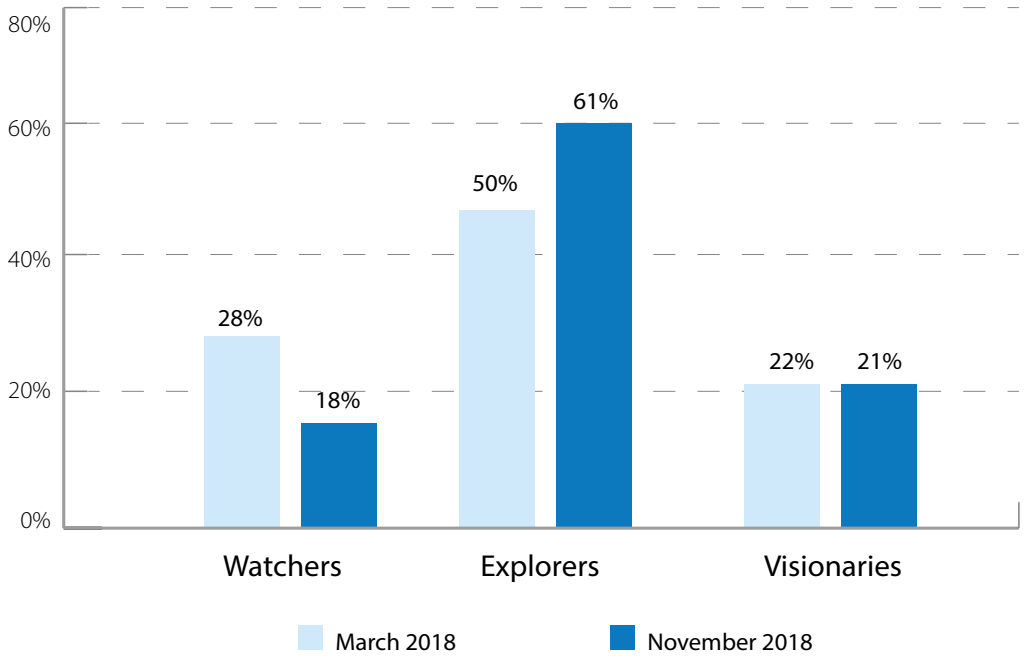
The digital transformation journey

In early 2018, Infosys surveyed more than 1,000 senior management level executives working in large organizations around the world with more than 5,000 employees and over US $1 billion in annual revenue. Based on that survey, we produced a report — The New Champions of Digital Disruption: Incumbent Organizations — showing that incumbent organizations (as opposed to digital natives) fall into three clusters determined by their progress along the digital transformation journey:

1. Watchers who still see technology primarily as an enabler of efficiency. They have begun to deploy digital initiatives but are largely focused on reducing costs and boosting productivity, rather than looking for digital-driven ways to differentiate themselves from competitors.
2. Explorers who express great interest in digital initiatives but have not yet used digital means to transform their business models. Instead, these companies have focused on applying digital to 'low-hanging fruit' initiatives that directly impact customer perceptions and experiences.
3. Finally, visionaries who act decisively to seize the opportunities that digital technologies offer. Visionaries apply these digital technologies to accelerate growth by transforming both their culture and their business models. They understand that their future success depends on learning to think and act like digital natives.

Knowing that many organizations are rapidly intensifying their digital transformation efforts, Infosys conducted a new survey in November 2018 to gauge the pace of that change. This new survey shows that the percentage of visionaries among survey respondents has remained essentially unchanged, but many companies have migrated upward from the watcher to the explorer level. These findings match what executives have told us – companies can advance from the watcher to the explorer level without herculean effort, but reaching the visionary level is significantly more difficult.

Fewer watchers, more explorers



The need to be visionaries

Almost every incumbent is being pushed by disruptors or peers to digitally transform. The CIO for consumer banking at a leading US financial institution believes that the pace and magnitude of the current technology-driven changes are unprecedented.

"Organizations have never had to transform in this manner before," he says. "We need to recognize the urgency of making this digital transformation and get laser-focused on our most important business initiatives. Only with this focus will we be able to make the massive changes that are necessary."

Many companies will only survive if they become digital transformation visionaries. "Digital natives are growing fast and getting to billion-dollar valuations in record time," points out an executive director of product technologies at a US-based beauty products leader. "We're an explorer, but to survive, we need to become a visionary organization. It's a struggle to get there."

Some incumbents unable to keep up with the pace of technological change have already succumbed to competitive pressures. Many more will likely fall by the wayside. To avoid being blindsided by competitors and stay relevant, companies must find ways to transform their products, processes and business models using digital-enabled approaches and technologies.

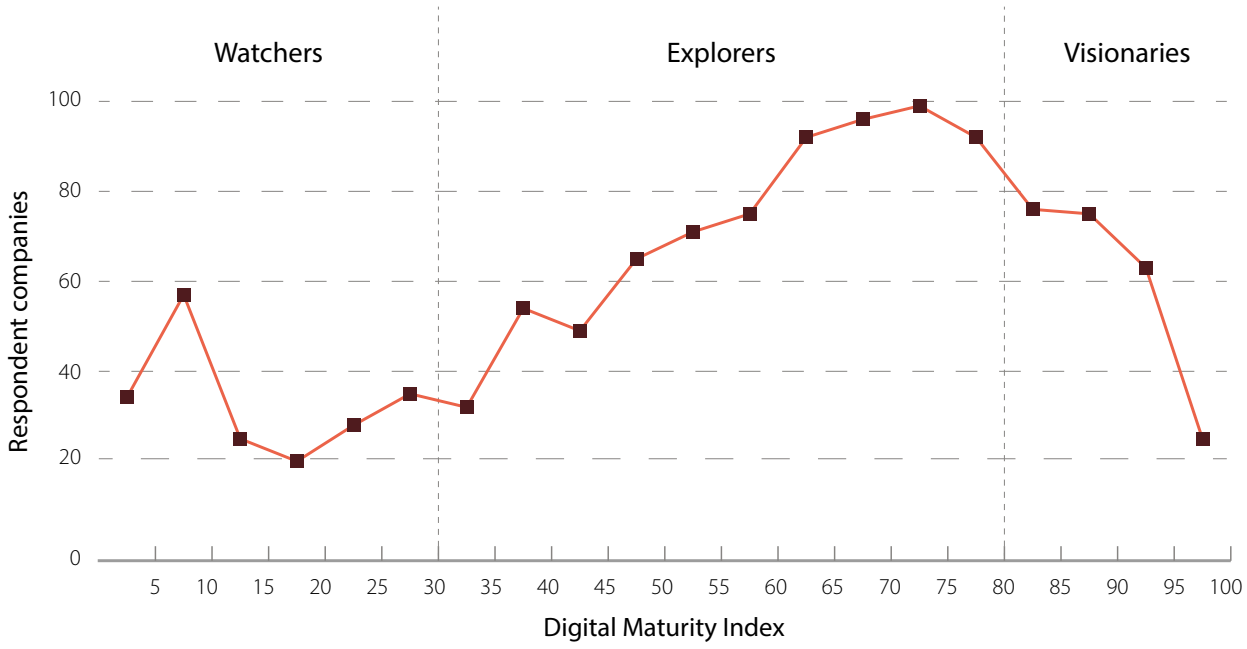
Navigating the transformation journey

Our most recent study takes a closer look at the transformation journey. We identified 22 key digital initiatives and then asked respondents where their companies stood on implementing each initiative:

1. Not started (or in planning)
2. Completed multiple proofs of concept
3. Completed pilot projects
4. Operating at scale

We then developed a Digital Maturity Index and assigned each company an index score from 0 to 100 according to its progress on pursuing and implementing the 22 key initiatives.

Companies on the digital journey

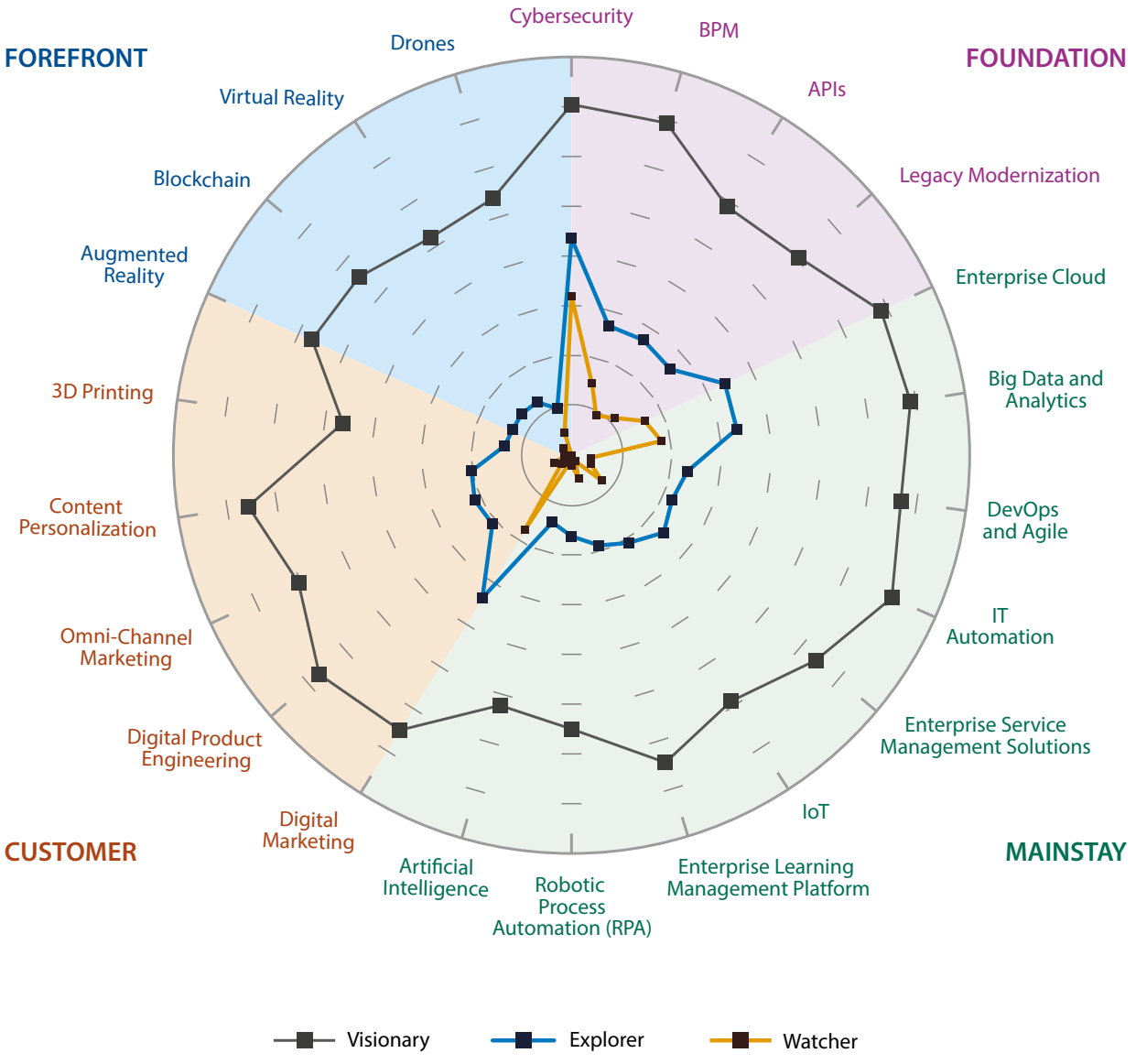


Comparing clusters on their digital transformation journeys

As companies advance through the digital transformation journey from watchers to explorers to visionaries, they operate more and more key digital initiatives at scale. The types of projects change throughout the journey and can be grouped into four categories:

- **Foundation** initiatives must be implemented to modernize legacy systems.
- **Mainstay** initiatives represent the core elements of digital transformation, including automation and artificial intelligence (AI).
- **Customer** initiatives primarily impact the customer experience. They include omni-channel marketing and content personalization.
- **Forefront** initiatives harness cutting edge technologies, such as augmented reality (AR), drones and blockchain.

Visionaries stand out – cluster progress across 22 digital initiatives



As shown in the previous figure, visionaries are significantly more advanced than explorers in their implementation of all initiatives, and watchers are far behind.

Watchers

- Typically operate at scale on only one or two digital initiatives, with perhaps a couple of others in the pilot testing phase.
- Less than two percent operate at scale on the Internet of Things (IoT), AI, Robotic Process Automation (RPA), content personalization, or any of the forefront initiatives.
- Fewer than 14% have advanced beyond the planning stage on any forefront initiatives.
- Among the foundation initiatives, cybersecurity shows the most progress. Compliance and liability pressures are driving all companies in all clusters to invest here.
- Watchers are investing in Agile and DevOps, with success in pilots. However, our research indicates difficulty in converting these small wins to larger initiative success.
- Digital marketing is the sole customer initiative where watchers have made significant progress. This is seen as a leading indicator of customer-centric initiatives to follow.

Explorers

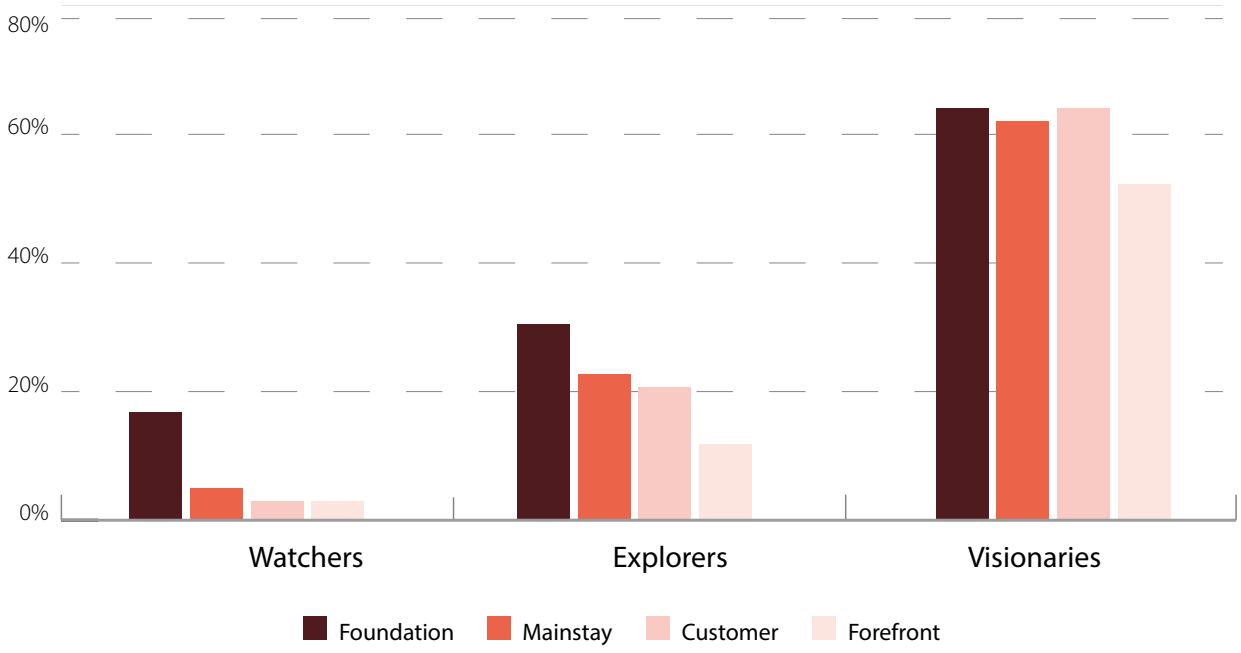
- Much further along than watchers, explorers have completed pilot projects for an average of seven key digital initiatives.
- Have progressed past the planning stage on four-fifths of the initiatives. Yet, they are operating at scale on only about six initiatives.
- Cybersecurity also showing progress for Explorers, as the leading area in foundation initiatives.
- Earlier investments in business intelligence have provided a foundation for big data and analytics. Explorers have made more progress here than other mainstay initiatives.
- Explorers have also made more progress on digital marketing than the other customer initiatives. This rules-based, revenue-oriented initiative tends to provide a clear business case and also highlights the importance of growing sales in an environment of flat demand and price pressure.

Visionaries

- Far ahead of their peers, on average they are at scale for 12 initiatives and have completed pilots on seven further initiatives.
- They have either completed pilots or achieved scale on nearly all key initiatives, with exceptions only on forefront projects like drones (five percent pursuing), virtual reality (three percent), 3D printing and AR (two percent each).
- The overall consistency of progress across initiatives is remarkable, and shows that a comprehensive approach is required to attain leadership. It also implies possible synergy across initiatives, where success in one area like big data may provide core capabilities for another initiative like IoT.
- Even in the forefront category, where progress is understandably less advanced than the others, there is still consistency across initiatives. From our discussions with industry executives and experts, this highlights a 'lean forward' mindset that embraces the understanding that today's advanced technologies will become a vital part of tomorrow's operating system.

Changing focus, making progress

Visionaries have many more initiatives operating at scale



As companies advance along their digital transformation journey, they tend to focus on different sorts of projects. Watchers are just trying to build a foundation for their digital transformation, so they are unlikely to have the bandwidth to launch mainstay, customer or forefront initiatives.

As companies reach the explorer stage, they turn their attention to a broader range of initiatives including such mainstay ones as big data and analytics, RPA, and enterprise cloud. They can also spend time working on customer initiatives such as content personalization, digital product engineering and digital marketing. However, explorers must still invest time focusing on the basics, such as scaling the implementation of core foundational initiatives such as legacy modernization, APIs and BPM.

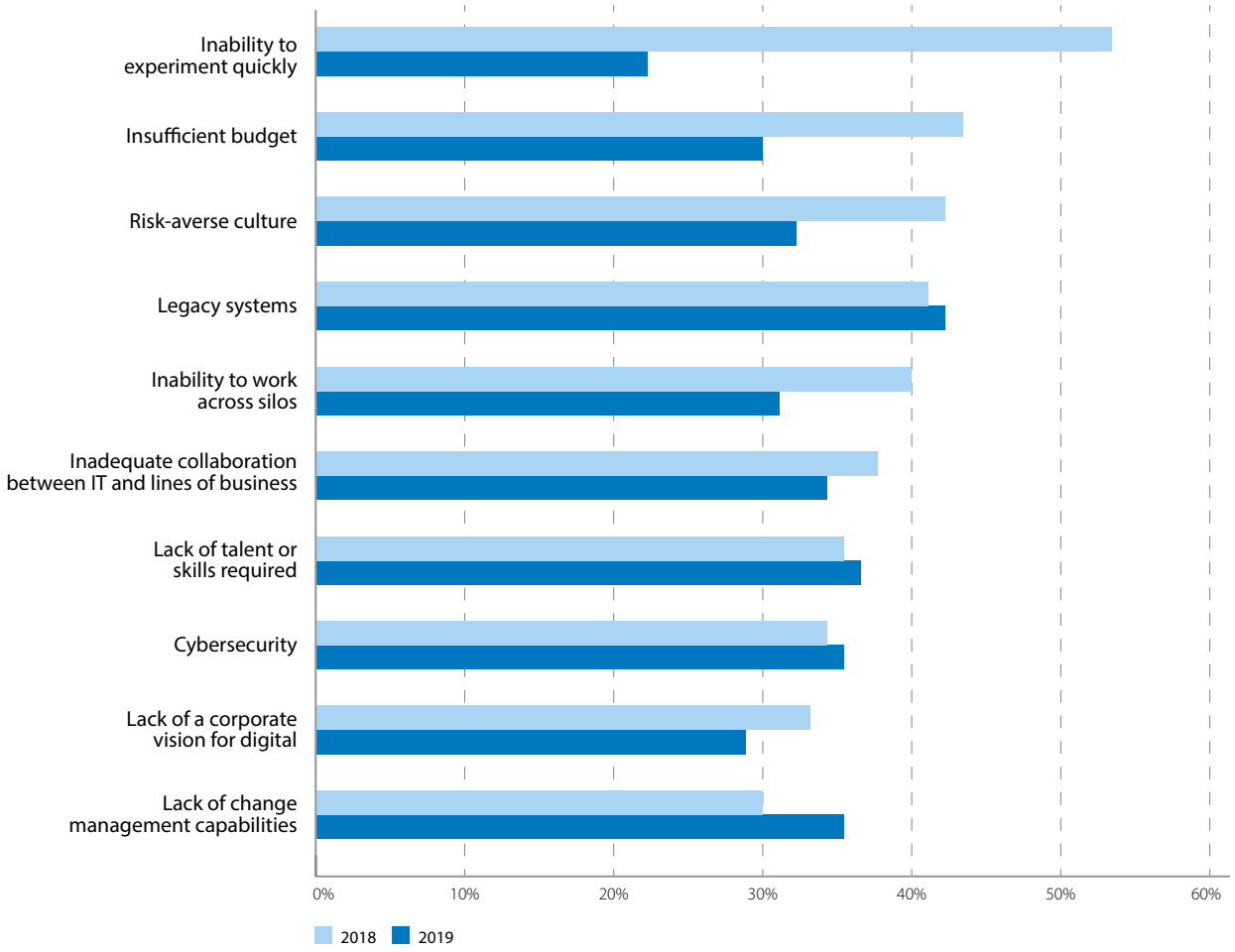
Visionaries bring many initiatives to scale along foundation, mainstay and customer categories. They are also the only cluster making substantial progress on scaling forefront initiatives such as 3D printing and blockchain technologies.

Shifting barriers on the digital transformation journey

Our survey revealed that an inability to experiment quickly is the greatest barrier to digital transformation that companies faced in 2018. More than half of respondents (53%) worry that their companies lack the capacity for rapid experimentation that is essential for testing different technologies and figuring out which ones hold the most promise.

Most companies believe that they can quickly develop this capability. Only 22% of respondents felt that lack of rapid experimentation skills would still frustrate their digital transformation in 2019.

Barriers in descending order of importance in 2018



We believe that companies underestimate the challenge of mastering the art of rapid experimentation. Companies need to implement major cultural changes to become adept at rapid experimentation, according to Alok Uniyal, head of Agile and DevOps at Infosys. Significant cultural shifts rarely happen quickly.

While respondents feel that most barriers to digital transformation will diminish over time, they have persistent concerns over legacy systems. Legacy systems currently rank as the fourth most commonly cited barrier (named by 41% of respondents), but participants expect that it could become the most serious barrier in 2019.

Indeed, digital natives cite their lack of legacy systems as a major competitive advantage. "We have no legacy systems, all cloud-based technologies designed not only to meet all our needs now but be flexible, scalable and adaptable in the future", notes Yvonne Burkhouse, CIO at HAAH Automotive Holdings – Zotye USA, a startup that seeks to disrupt the car-buying process and achieve a new level of dealer and customer service satisfaction. "Our ERP and dealer management system will be combined and built on one unified data platform based on Oracle NetSuite/ Advectus. This is disruptive and innovative for dealers as a new way of thinking about one business solution."

Experience with digital transformation is a double-edged sword. On the one hand, the visionaries who have progressed the furthest along the digital transformation journey recognize the most barriers, identifying more than four from the list of 10 that we provided.

At the same time, visionaries are also more optimistic than their counterparts in the watcher and explorer groups about overcoming these barriers. This demonstrates that companies become more confident as they gain experience with implementing successful pilots and bringing ideas to scale on their digital transformation journey.

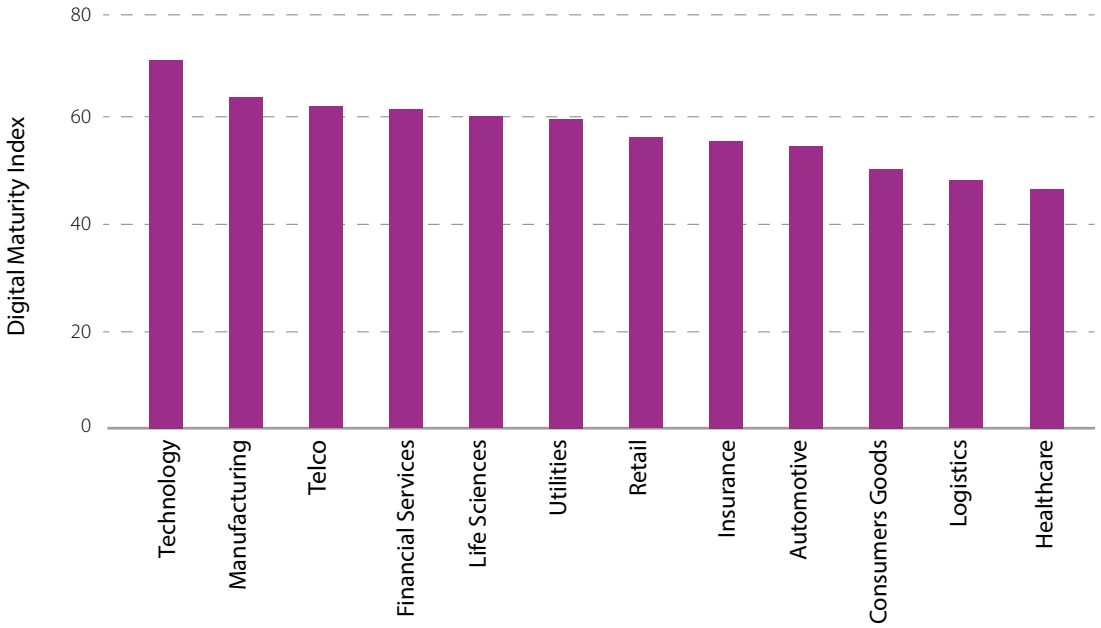
Survey respondents are also confident that budgetary constraints will become less of a barrier in 2019. While 43% of participants cite 'insufficient budget' as a barrier to digital transformation in 2018, only 30% feel that it will still be a serious stumbling block this year. If organizations devote more investment to key digital initiatives, that would show that senior leaders are strengthening their commitment to digital transformation.

On the flip side, participants expect that change management will only grow harder as time goes on. While 30% of respondents named 'lack of change management capabilities' as a barrier in 2018, 36% said it would be a problem in 2019. Watchers and explorers are especially worried about managing change.

Digital maturity by industry

Our survey revealed significant differences in digital maturity by industry. We found that technology, manufacturing, telco and financial services companies had progressed furthest on their digital transformation journeys. Digital Maturity Index scores were distinctly lower in other industries such as consumer goods, logistics and healthcare.

Industry ranking on the Digital Maturity Index



Compared to other industries, retail is in the middle of the pack on digital transformation maturity. Even though the retail industry has been ravaged by digital disruption, many legacy retailers have not made much headway on their digital transformation journeys.

That said, some legacy retailers have taken bold steps into a digital transformation future. *Supermarket News* reported that Walmart has begun experimenting with having robots expedite fulfillment of online grocery orders and using autonomous vehicles to transport grocery customers between their homes and the store. "Walmart is just as innovative as Amazon, for the population they serve, the number of things they try, and the strategies they take," says Corey Glickman, leader of strategic design consulting at Infosys.

The automotive sector overall trails other sectors on its digital transformation journey. While players have invested across a broad range of digital investments – with autonomous being the most noteworthy – current challenges include falling sales and margin pressures which are forcing companies to focus on short-term results rather than transformation. In some cases, individual companies are stalling or even regressing on their digital journeys, according to Randall Urban, a vice president in the Digital Office at Michigan-based parts manufacturer Adient.

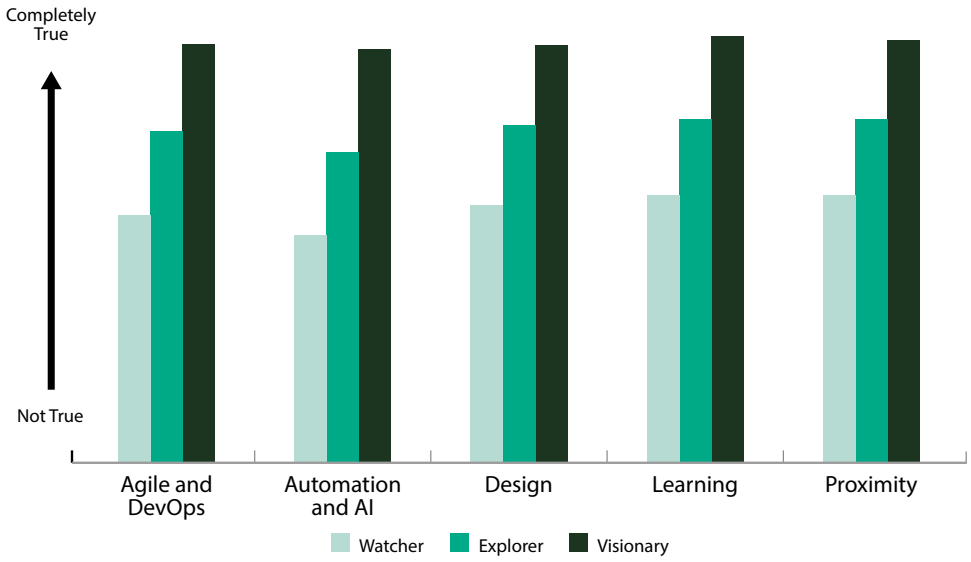
In both the insurance and financial services sectors, legacy players are facing intense competitive pressures from both startups and large tech companies muscling into the sector. These legacy incumbents are trying to make progress toward digital transformation, but their efforts are hampered by regulations, security concerns and complex internal processes.

Accelerating the digital transformation journey: five key capabilities

In August 2018, Infosys conducted a research study that identified five capabilities that help companies accelerate their digital transformation journeys: Agile and DevOps, Automation and AI, Design, Learning, and Proximity.

In our November 2018 executive survey, we looked deeper to understand company competencies in these areas. We found that companies with the highest Digital Maturity Index scores (i.e., the visionaries) do indeed have the strongest abilities in all accelerator categories.

Visionary companies have superior accelerator capabilities



Cluster average

The five digital capability accelerators above are each powerful in their own right, and we examine each of them on the pages that follow. Before looking at the accelerators individually, it is worth reviewing them holistically at a summary level. When we reviewed client and industry digital transformation programs, we found multiple successes in the past two years where one of the accelerators was dominant. However, in discussions with executives about the next twelve months and beyond, the consistent message was that multiple accelerators will increasingly be needed for future success. Agile and DevOps programs will be required for the uncertainty that accompanies the frenetic ongoing pace of change. The amplification and intelligence from automation and AI will be required to make sense of an increasingly complex world. Design will become a non-negotiable expectation that goes beyond functionality to experience, and will permeate more and more business functions. The rate of change faced by enterprises, and the necessity for widespread adoption, virtually guarantees that learning will be a core part of any lasting transformation. Finally, the location or proximity of work will be a major factor in capability and program planning, both for strategic intent and cost management.

Let's examine each of these digital capability accelerators.

Digital transformation accelerator #1: Agile and DevOps

"There's an overarching need for companies to be nimble and responsive, to understand company needs, and quickly develop solutions," says Alok Uniyal, vice-president and Agile leader at Infosys.

"Agile and DevOps enable companies to beat competitors by quickly experimenting, validating ideas and scaling leading-edge solutions. They enable greater flexibility and higher productivity. DevOps helps by automating the agile software development lifecycle, enabling companies to deploy new features on a nearly continuous basis."

The visionary companies that are furthest along the digital transformation journey have the strongest ability to deliver agile programs at scale. They have fully adopted both an agile mindset and agile practices. Their IT developers and operations teams cooperate closely to achieve business objectives. Their technology teams deliver results fast enough for these legacy companies to stay competitive and fend off digital native rivals. Such visionaries are also likely to have a robust, stable DevOps platform that serves their entire enterprise.

For example, Telstra, the largest telecommunications company in Australia, was an early adopter of agile and DevOps. Facing intense competition in its local market, the company decided to scale these initiatives and set up engineering centers that operate entirely on agile and DevOps principles. By routing digital work through these centers, Telstra successfully slashed its time spent on coding by more than 50%. By 2019, Telstra's chief wants to have up to 6,000 staff developing software using agile methods.

There are two primary barriers that prevent companies from making more progress on agile and DevOps. One major organizational challenge is changing the culture to ensure that business cooperates with IT from the start. Our research has found that about 80% of development projects are IT-led and IT-sponsored, without early involvement of business stakeholders. If companies can change their culture and mindset to ensure early business and IT collaboration, they will dramatically improve likelihood for agile and DevOps success.

In addition to cultural change, companies also need to make sure that their employees are trained in new ways of working. This retraining must extend throughout the organization so that all stakeholders have a good understanding of these new ways of working.

Agile and DevOps methods can be extremely useful in certain industries such as branded consumer goods where speed is critical to successfully keep pace with fast-changing trends. In other industries, such as banking and airlines, there are regulations, risk and audit controls that can impede efforts to scale up agile and DevOps. "As we transform our mobile apps using continuous delivery and DevOps, we have control processes that have the potential to slow us down," says one CIO from a major bank. "Like many large firms, we likely have to rethink these control processes as well."

While our survey shows that many companies are confident — perhaps overconfident — in their ability to master rapid experimentation, the reality is that agile and DevOps techniques are hard to master. Even companies that purport to have flexible, agile teams may still rely on the same old structured, rigid waterfall development methods inside those teams.

There are practical steps that companies can take to improve their agile and DevOps skills. Companies can work faster and scale quicker while meeting the demands of global markets by implementing agile on a distributed basis.

"Companies need to become more dynamic and nimbler," says Uniyal. "To react faster to changing markets and come up with improved products and services, companies need to have a culture of rapid experimentation, quick development, prototyping and validation. To accomplish this, they need to be able to visualize their end-to-end value chain. This is a major challenge in legacy organizations where the value chain may be fragmented. The best way to overcome this issue is by implementing Lean."

Digital transformation accelerator #2: Automation and Artificial Intelligence

Artificial intelligence and automation have the potential to radically transform existing business models and unlock new opportunities. For example, insurer Liberty Mutual now uses a large-scale AI deployment to process claims and provide quotes for auto insurance. In a much different industry, a leading mining company is using AI to develop a comprehensive system that will incorporate geologic maps, commodity trends and operations data to provide guidance on when to mine, where to dig, and what commodities to extract.

What distinguishes visionaries from their peers when it comes to AI and automation? Our survey found that visionaries are more likely to have developed and started to implement well-articulated strategies and initiatives for AI, RPA and IT automation. They also tend to approach automation and AI as a way to amplify human capabilities rather than just reduce headcount and costs. Their employees have the skills to implement automation and AI technologies in ways that advance corporate strategic goals.

That said, companies at all stages of their digital transformation journeys are grappling with the ethical implications and opacity of artificial intelligence. A vice president at a major airline told us that he considered, but then rejected, a software package that promised to use facial analysis to render judgments on the honesty and integrity of job candidates. The logic of the algorithms was not transparent, which made it impossible for this executive and his colleagues to trust its output or explain it to others.

"We need a paradigm shift in how we interact with AI and automation," says John Gikopoulos, global head of AI and Automation at Infosys. "We should apply ethics and control at the personal level, rather than expecting a process, machine, or laws to govern these technologies once they are out in the world."

Better tools are constantly coming to market that give companies new ways to create AI applications. Companies need to figure out the best ways to harness these tools to develop useful solutions that meet client needs. To get the most benefit from automation and AI, most incumbent companies will need to convince their own workforce about the benefits of these technologies and reskill employees to make sure that people and machines can work seamlessly together to achieve superior results.

Digital transformation accelerator #3: Design

Design skills enable companies to rethink every aspect of their business, from internal operations to external customer service. Companies with superior design skills use technology to find novel solutions to serve human needs.

Our survey shows that companies with design strengths are better able to seize opportunities to improve both customer and employee experiences. They are more likely to deploy technology in the form of digital product engineering, content personalization, and augmented reality.

Visionaries understand that design is more than mere user experience. Instead of segregating user-design within its own silo, they make sure that more people, in more functions across the company have responsibility to design products and services that maximize user satisfaction.

Design-led companies have effective processes in place to continuously listen to customers. They are committed to testing ideas and iterating to make those ideas better over time. They measure design performance and results with the same rigor that they apply to tracking revenues and costs.

In the automotive industry, Volvo has combined technology and design to create a superior experience for its customers and distinguish itself from competitors. The company built an app called On Call that offers Volvo owners the ability to interface with their cars from a phone or smartwatch — starting the car and adjusting the temperature remotely. But Volvo went much further than that, partnering with Amazon to let customers accept deliveries right into the trunks of their Volvos. And Volvo XC40 owners can even use the app to give friends and family keyless access to their vehicles and let them borrow their cars.

When it comes to pursuing design-led solutions, Infosys design executive Corey Glickman warns against excessive prototyping. He says too many companies spend millions of dollars a year on prototypes and proofs of concept, without ever moving on to implement those pilots at scale. In times of disruptive change, companies must bite the bullet and make big bets. It sometimes takes an industry leader or innovative upstart to establish a new norm. "No one would have a digital twin today if GE hadn't sunk millions of dollars into developing theirs," Glickman points out.

Systems engineering has emerged as a critical role in the digital age. The best systems designers are diligent scientists with master's degrees and many years of work experience. This type of talent is in short supply, exacerbating the war for talent. However, the good news is that a systems designer with experience in one area can typically apply his or her knowledge to other domains. "Systems designers understand how large, complex systems behave," Glickman says.

"As a discipline, systems design is universal enough that someone with experience in financial services can apply their skills and experience to software design or healthcare."

On a practical, operational level, our research has confirmed the virtue of breaking up large projects into small teams of highly-skilled programmers handling the hardest and most important challenges. These all-star coders are hands-on, working iteratively in physical and virtual whiteboard environments, efficiently pulling from reusable code libraries and writing their own fresh code every day. This approach can reduce development time from three months to as little as three weeks. With this arrangement, companies can deliver more effective programming, solve difficult problems faster, and reduce technical debt that may have accumulated through legacy programming and processes.

Finally, the success of design-led digital transformations depends on the involvement of senior executives. In the early digital era, design involved taking individual physical processes like teller banking and putting them online, first through ATMs and then apps in the smartphone era. Now design is helping to transform major components of enterprise operating models, and success requires buy-in and leadership from the top.

Digital transformation accelerator #4: Learning

Companies are facing a significant gap between the digital skill sets they need and the talent available, according to Jonquil Hackenburg, Partner at Infosys Consulting. "Recent graduates, even in desirable fields like data science and enterprise architecture, lack the experience and expertise to implement at scale," warns Hackenburg. "Meanwhile, many legacy IT professionals struggle to engage with subject matter experts in a way that translates business needs to modern, scalable technology solutions."

Visionary companies are more likely than other firms to bridge this talent gap by investing in the digital tools and infrastructure necessary to support a robust, always-on, continuous learning and reskilling program for employees.

Continuous learning is fundamental to develop the workforce of the future, one that can achieve and sustain digital transformation. Employees must become nimble, responsive and proactive enough to identify and seize the best opportunities made possible by emerging technologies and new business models. Our research findings suggest that such continuous learning programs play an especially important role to help employees develop skills in agile and DevOps, areas that are as much mindset shifts as technical skills.

The good news for enterprises is that self-directed learning programs like LinkedIn Learning are delivering results and seeing employee adoption. "Employees used to expect training to be in person, that companies must send them to a physical instructor-led location to learn a new skill," explains an IT executive who believes in employee development programs.

"Now employees are willing, even enthusiastic to self-train if you give them the tools. Employees appreciate the convenience of self-directed learning programs."

Employees realize the critical importance of continuous learning to keep themselves marketable and relevant in a rapidly changing business world. Beyond internal skills development, learning programs have the added benefit of supporting retention. Employees appreciate when companies make investments in their career development.

Many leading companies have built their own internal training, reskilling, and upskilling programs. In the automotive industry, Nissan has built a digital university where IT people are moving beyond merely delivering technology projects, and learning how to partner with the business to identify problems and co-create optimal solutions.

Property and casualty insurer Liberty Mutual has a GoForCode bootcamp to train hundreds of employees through a range of learning options including self-paced online classes, in-office workshops, and immersive coding courses. Company executives recognize the value of retaining their corporate body of knowledge in their employees. As CEO James McLennon told The Wall Street Journal:

"We can teach technology skills. It is the knowledge of the company and insurance that is much more difficult to learn."

Our research shows that watchers often overlook the substantial benefits of learning accelerators. For companies looking to make the move from watcher to explorer, investing in learning is an important early step.

Digital transformation accelerator #5: Proximity

Even though many companies are competing in a global marketplace and have access to a growing suite of collaboration and communication tools, distance still adds complications to any initiative or project. On the other hand, proximity enhances collaboration and can remove physical barriers to success in product and IT development projects.

"Value creation occurs when companies bring teams together end-to-end in close proximity," advises Deverre Lierman, leader of the Infosys Raleigh Technology Hub.

"Companies should deliberately structure their ecosystem and choose their partners with an eye to maximize innovation, speed and responsiveness. The key is to capitalize on the benefits of high-quality, low-cost locations without sacrificing the advantages that proximity brings. Visionaries balance global delivery centers with nearby innovation hubs."

These hubs may be internal or involve strategic partners.

Our data shows that visionaries are more likely than watchers or explorers to have implemented finely-tuned strategies to locate employees together in geographies that balance cost with proximity to partners and customers.

Still, even visionaries depend on the contributions and efficiency of distributed development teams. Visionaries supply these teams with effective collaboration tools and implement standards to measure the quality of work these distributed teams deliver. To the extent that visionaries rely on global development centers, they also invest in the infrastructure and systems to minimize the impact of distance.

At the same time, visionaries recognize that there is no substitute for physical proximity and are quite willing to establish well-staffed technology and innovation hubs near important partners or customers. That is why Infosys is establishing six new technology and innovation hubs in the United States and staffing them with 10,000 American employees to serve its customers there. Such proximity is especially valuable when working on initiatives involving customer experience, such as product development, content personalization and augmented reality.

"When the business and IT leads work closely together, they can each see how important the project is to the other side," says a beauty products executive. "Projects work much better that way."

Companies looking to reap maximum benefits from proximity should locate their technology and innovation hubs near end-users (i.e., clients) and in places that have intrinsic appeal for the talent that the company wishes to recruit and retain. Locations near top universities are also attractive, since those schools can provide a pipeline of candidates for recruitment and an ecosystem for incubating innovation ideas.

Companies at all stages of digital transformation should strive to create a culture that attracts talent. Our research shows that employees want to work in a collaborative and collegial environment, where they know they can focus on getting results without wasting time fighting turf wars.

Practices and mindset — what sets visionaries apart

Every incumbent company knows that it needs to make progress on its digital journey, but our recent survey indicates most are not moving fast enough. "We're driven by the knowledge that the market is changing rapidly," admits one source in the auto industry. "We want to be ready for all the developments with connected cars, subscription services and multi-factor vehicle ownership. But we can't implement those types of technologies and programs on our current platforms. If we don't get those capabilities in the next few years, we're going to lose out to competitors."

As our survey showed, most legacy companies are still at the watcher or at best the explorer stage of the digital transformation journey. How can they move to the visionary level? What sets visionaries apart from watchers and explorers?

According to our research, visionaries stand out in the way they have fully embraced the mindset and practices of both *being* agile and *doing* agile. To become more like visionaries, companies should put in place a formal digital transformation strategy, and share that plan with employees, customers and partners alike. They should also develop and implement a comprehensive strategy for using automation and AI to bolster human capabilities, rather than just focusing on cutting costs.

These are not trivial matters. Companies will face real challenges around talent recruitment and reskilling, retooling legacy systems, building the five accelerator capabilities and fighting off lean, hungry digital native disruptors.

The truth is that incumbent companies need to do three things, do them all well, and do them simultaneously:

1. Establish the technical foundations for digital transformation.
2. Build technological capabilities and talent.
3. Innovate at the speed of agile.

There are two ways that companies can give themselves a boost on the digital transformation path. They can seek to amplify their existing capabilities by focusing on high-value projects with the greatest potential impact, and they can partner with other organizations to gain access to complementary skills and resources.

Amplify

Companies have limited talent resources, so it makes sense to focus systems designers' efforts on the biggest problems where the solutions they create will have the greatest impact. "You can amplify the impact of designers by assigning them to small teams where they can work together to deliver scalable solutions that can be replicated throughout the organization," explains Infosys' Corey Glickman.

"If you have the right systems and process, a small number of talented individuals can have a big impact on a company's digital transformation journey."

Companies need to figure out which projects to prioritize and how to push the digital envelope where it will matter most. Visionaries are comfortable with different parts of the organization being at different steps in their digital transformation journeys.

Here's a key insight — not everything needs to be agile. During our research, time and again executives have stressed that some scope and projects take more time and care to get right, and this means waterfall in some cases.

At one airline, for example, the HR mainframe was working smoothly with no upgrades needed, so the company could adopt a watcher stance there. The airline took an explorer approach to testing bots for employee analytics and customer service purposes. Meanwhile, it had reached the visionary level when it came to the wide scale deployment of handheld devices with cutting-edge capabilities across the company.

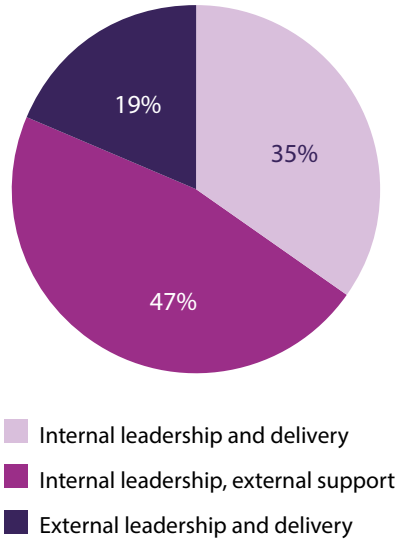
The CIO at one financial services company agreed that prioritization and proper allocation of scarce resources could be key to having the desired impact. "Right now, we're trying to do a little bit in each area and bring the entire organization along simultaneously," he admitted.

"While this is delivering some progress, we may focus our attention in a smaller number of high-priority areas. That's the only way we can accomplish our digital transformation in a big way, as opposed to tinkering around the edges."

Partner

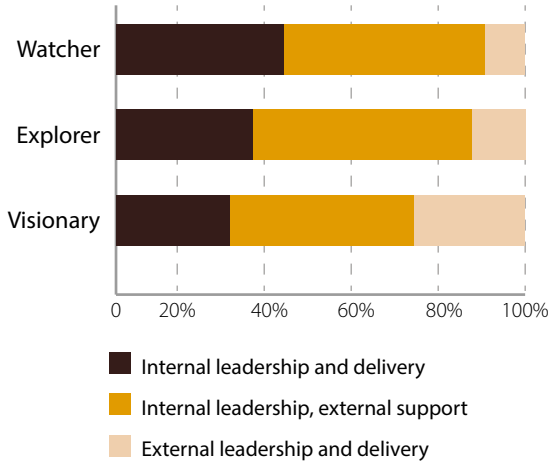
Respondents told us that only about a third of digital initiatives are led and delivered internally; about a half are led internally and delivered by partners, while the remaining 19% are fully delegated.

Companies partner for two-thirds of their digital initiatives



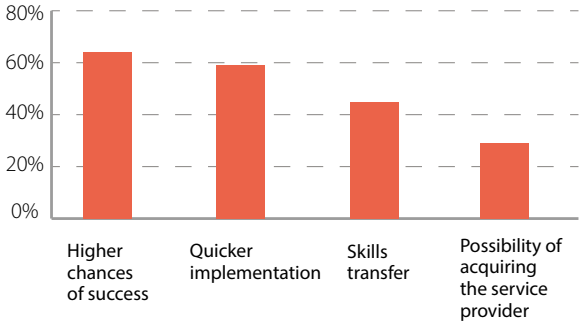
There is a significant difference in how clusters handle partnering. Watchers are the most likely to run initiatives entirely internally. Explorers are most likely to lead projects internally, while having them executed externally. Visionaries are more likely than the others to let partners run and deliver initiatives on their behalf.

Visionaries are more likely to partner on digital initiatives



According to our respondents, partnering offers two primary advantages: higher chances of success and quicker implementation.

Partnerships have several advantages



According to our research, visionaries are more likely to form partnerships because they have the process and governance maturity needed to build and run them effectively. It's the same reason companies that invest in architecture and data management are more likely to support API interfaces with external services. Visionaries also have experience building partnerships and understand the multi-faceted value of a good partnership, so they are more likely to pursue and forge additional partnerships when opportunities arise.

Visionaries' digital accomplishments also give them a better appreciation for the unique capabilities that partners bring to the table. When it comes to the vast world of technology, visionaries who develop certain technical skills also tend to learn that they cannot be experts at everything. Instead, they recognize the value of focusing on their core competencies and gaining access to other expertise through mutually-beneficial partnerships.

Respondents told us the best partnerships are built on strong personal relationships among humans. "The relationship is more important than the contract," says Kirk Limacher, VP of HR Services at United Airlines. "You can't just keep your partner at a distance and try to manage by metrics. You need to spend time with each other, in person at each other's locations.

"You need to invest time and effort to understand your partner's culture and share goals so that you can also share successes."

Our survey showed that companies are willing to partner on almost any digital transformation initiative, but they are least likely to work with partners on legacy modernization, where they presumably feel they have the in-house knowledge to upgrade those systems on their own.

Survey participants reported that their companies were most likely to ask an external partner to both lead and deliver on sophisticated initiatives like RPA, blockchain, 3D printing, and AI. Nearly one-fourth of incumbent companies turn to partners for help with these sorts of initiatives that require specialized, hard-to-recruit expertise.

Companies were more apt to favor internal leadership, while partnering with external help for execution on initiatives such as cybersecurity, enterprise cloud, IoT, APIs, and drones. These areas also require specialized expertise and significant resources, but in-house staff may already have some experience in these fields and thus feel more confident directing such projects themselves.

According to our research, US-based companies tend to view intellectual property (IP) even more as a proprietary advantage than their European and Asian counterparts. As a result, US-based firms more often prefer to develop high-value innovation in-house. European firms partner for IP in a more transactional manner, while Asian companies have shown more openness for partners to take leading roles in IP creation.

Accelerating the journey

As mentioned in the Amplify section above, every company—including visionaries—needs to prioritize specific digital transformation projects in order to maximize the impact of scarce resources.

How can a company know which projects to prioritize?

- Analyze its level of digital maturity and develop a clear, honest evaluation of current initiatives relative to objectives.
- Assess the short-term future of its industry. What are the key threats from disruptors? Which emerging technologies hold the most promise? How are customer expectations changing? What impact will these factors have on business models?
- Ensure that the company has a solid digital foundation by modernizing legacy systems and working on APIs and business process management. Strength in these areas will enable success in other aspects of a digital transformation plan.
- Strengthen and refine the five accelerator capabilities - Agile and DevOps, Automation and AI, Design, Learning, and Proximity.
- Forge relationships with partners whose skills and services could promote faster, better progress toward digital transformation goals.

As with other change initiatives, senior executives should take an active role in driving digital transformation initiatives.

"You need IT leaders to embrace digital transformation just as much as your digital change advocates," says a senior auto industry executive. "I've seen IT leaders use their power to shut out business partners or minimize the importance of new initiatives around technologies like RPA."

Leaders have to send a signal that such internal power struggles will not be tolerated. Digital transformation journeys can only succeed when individuals from multiple areas of the organization step outside their comfort zones and work across boundaries for the good of the entire enterprise.

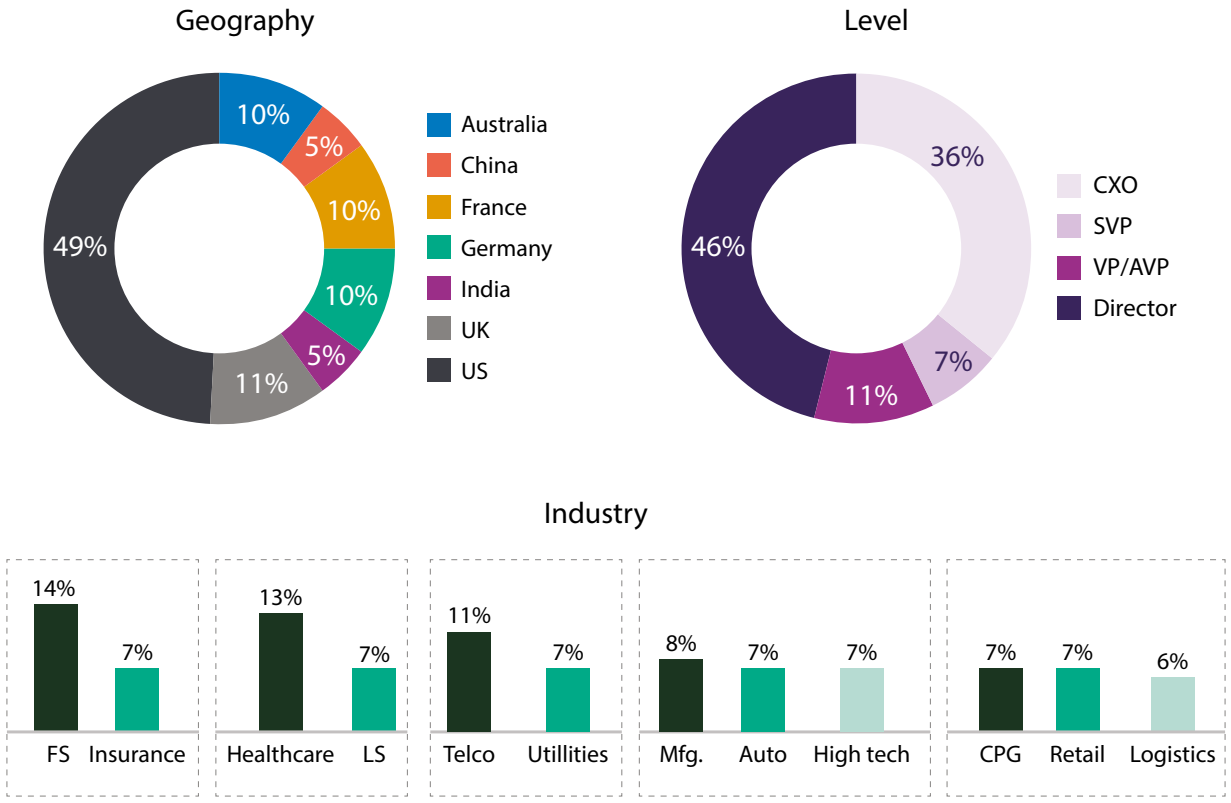
The digital future is arriving at a rapid pace, and the consequences for inaction are more severe than ever. With proper planning, cooperation, and commitment, business leaders and IT professionals can work together to position their companies for success, no matter which direction the digital winds may blow.

Survey methodology

In November 2018 the Infosys Knowledge Institute used a blind format to conduct an online survey that attracted responses from more than 1,000 CXO and other senior-level respondents from companies with revenue upwards of US $1 billion. Respondents represented multiple industries and hailed from Australia, China, France, Germany, India, the UK and the US.

To gain additional qualitative insights, we also conducted phone interviews with more than a dozen industry practitioners and subject matter experts.

Survey coverage



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About Infosys Knowledge Institute

The Infosys Knowledge Institute helps industry leaders develop a deeper understanding of business and technology trends through compelling thought leadership. Our researchers and subject matter experts provide a fact base that aids decision making on critical business and technology issues.

Notes

For more information, contact IKI@infosys.com