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Digital Process Acupuncture: How Small Changes Can Heal Business, and Spark Big Results

Savvy business leaders know that 'boil the ocean' strategies for digital change are usually doomed. Our latest research reveals that by applying digital remedies to precisely targeted process areas, organizations can relieve operational stress and generate improvements, yielding outsized results that ripple across the process value chain.

KEEP CHALLENGING™

Executive Overview

A car that parks itself. A drone "cameraman" capturing your sweet ski flip. 3-D printed jewelry. A selfie video of your weekend in Paris that's worthy of the Travelogue Channel. Drink up — because your Uber car just arrived.

Our daily lives have, in many cases, already gone digital, starting when we took one single step (often on a smartphone or tablet) that created a ripple effect that helped guide and inform our interactions with people, places and things. But what about your organization's business processes? How could a precision twist on digitization bring value to an entire value chain?

We call this emerging scenario "digital process acupuncture." The 5,000-year-old discipline of acupuncture is based on the belief that a set of accurately placed pinpoint treatments can impact the entire body. Similarly, we believe organizations can relieve operational stress that builds up at critical process connections by identifying and isolating processes (or sub-processes) that are materially connected to other important activities and applying precise doses of digital change. Precision doesn't mean half-measures, either; decisive action requires intensive, digital focus on the connective tissue that constitutes entire functional processes.

By using digital technologies to "heal" process bottlenecks, lubricate friction points, optimize manual inputs or handoffs, and relieve systemic pressure points in information flow, businesses across industries can unlock substantial value, maximize healthier business outcomes and improve the experience for all participants — customers, suppliers, partners and employees — across the value chain.

Examples of this highly targeted use of digital technologies include capturing images with drones to reduce insurance underwriting risk and bring insurers closer to real customer needs; using digital wallets and beacon technologies to create shopper awareness and boost retail sales; tethering touchless payments to loyalty programs to predict buying patterns; and using sensors, IoT or RFID for real-time monitoring to streamline the business supply chain.

Our study of 321 North American and European executives helps us understand how banks, PC&L insurance companies, healthcare payers and retailers are grappling with business process digitization today. Because many businesses have different views on exactly how digital process acupuncture applies to them, we offered a tight definition of what we meant by digital process change: using digital technology to instrument, accelerate and link a seamless process value chain, often by integrating

the physical and digital worlds.[1] Process value (both in top-line cost savings and bottom-line results) is created when targeted, precision-guided digital change revises the sequencing of key touchpoints and channels in a way that improves the experience or boosts engagement.

We also gauged how pervasive respondents' process digitization efforts have really been: casual, superficial or dabbling. As it turns out, most leaders are committed; in fact, only about one-third characterized their digitization efforts as being moderate or less.

Early winners in the digital era have shown us what works:

- **Focus on the front office first.** Customer-facing processes were prioritized in every vertical industry we studied. Approximately 64% of healthcare payers claim to have digitized enrollment and billing services, and 67% of retailers said they have digitized their B2C channels.
- **Trim fat and build digital muscle.** Digital process change propels top- and bottom-line results by more than 18%, our respondents project, which equates to true capital gain. Respondents said they decreased costs an average of 8% due to process digitization efforts, with the greatest cost take-out originating with insurers (10%), and the lowest returns achieved by healthcare payers (5.5%). Revenues rose 9.8% due to digitization, with the highest returns originating from insurers (11.6%) and the lowest returns – though still impressive – emanating from healthcare payers (8.2%).
- **Benefit from the treatment with process and value chain integration.** Precision digitization within the process value chain significantly boosts the impact of cost reductions and speed-to-market improvements, and eliminates friction points. For example, nearly two-thirds of banks, insurers and healthcare payers cited digitization as yielding high or very high levels of value chain integration; this was also the case for roughly half the retailers surveyed.
- **Keep it safe.** Effective digital process change relies on secure information and platforms. Roughly 59% of respondents cite data security as the chief issue today as their digital processes proliferate.

Whether your company is a bank, an insurer, a healthcare payer or a retailer, the time for digital acupuncture is now. Leaders need to make some critical choices regarding initiatives that will quickly allow the benefits of digital process acupuncture to permeate into other parts of the business. The scale of the opportunity is massive – and eminently achievable.

Pinpoint Current and Future Pressure Points to Release Value

Why is it so tough to enact real and enduring change in strategy, underlying processes and business approach? How can leaders really make something happen?[2] We believe the answer lies in starting small and finding the incremental but well-targeted steps that can benefit process constituents across the extended enterprise. As with real acupuncture, it's critical to understand how all activities and processes within the business interoperate. When organizations understand "how the knee bone is connected to the hip bone" in their extended processes and value chains, good things can happen.

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In the context of a business process, the end-to-end value chain is critical. For example, how could a slow and costly insurance underwriting process be digitally reinvigorated? Imagine a scenario that splices social media into the mix as a force-multiplier for business results: Via your Facebook page with other parents, you organize an impromptu party for your son's Little League team after practice this afternoon, and the potential of 15 8-year-olds wanting to jump on the trampoline in your yard becomes a real possibility. Immediately, an ad appears on your social media app, suggesting that "for $2.50, you can buy a micro insurance policy on your trampoline between 3:30 and 6:30 today."

In this example, the underwriting process changes from a paper-based abstraction, to one that helps you enjoy an afternoon with your kids, worry-free. The afternoon, as such, isn't digitally replaced or substituted. Instead, the nature of your relationship with your insurer is changed, enabling an in-the-moment experience that is valuable to both customer and company.[3] Through a digital process acupuncture approach, something you'd typically do as a chore, in a highly abstract way, is replaced: the annual (at best) review of your insurance policy.

By linking process gaps in a highly-precise, seamless, error-free and real-time way, the insurer's digital process acupuncture streamlines customer contact, reduces costs and boosts incremental revenue, while enabling the customer to make a quick decision, and then focus on having fun with the kids. Importantly, before the proactive, event-specific message ever gets sent, the groundwork must be laid to not only accommodate the request, but also enable it to flow seamlessly through the insurer's entire operations, from policy underwriting and transactional processing (billing and payment), through claims processing and customer service (should Little Johnny Little League's parents have to file a claim). From the insurance company's perspective, the hoped-for chain reaction through digital process acupuncture hinges on getting the customer to ask himself a question that's woven into the moments of daily life: "At what price, peace of mind?"

Competitively disruptive scenarios like this are becoming game-changers not only for the insurance industry,[4] but also for other organizations that understand how creating links between processes and sub-processes is key to unlocking digital value. A willingness to change — really change — is critical. According to Gartner, "So far, most digitalization in business has involved digital enablement of the supporting processes of businesses, but not the core 'DNA'."[5]

You may think your organization is already on the path, especially if it's already embarked on new process delivery models such as intelligent process automation (IPA). It's true that IPA can help break inertia – fast – on existing processes and step-change any low-hanging fruit available, as it's sometimes speedier to add smart robots to an existing process, even if redundant, manual handoffs, interfaces or approvals persist.[6] However, while these types of initiatives can provide an on-ramp to heightened efficiency and quality thresholds for rote work,[7] they can only take you so far. There are diminishing returns on a band-aided, bailing-wired kludge of legacy processes daisy-chained together with software "robots."[8]

Remember: IPA only speeds up existing "as-is" processes and doesn't change the process DNA. Real change – digital change – means not just automating processes but using digital change to totally obliterate legacy sub-processes that get in the way of re-thinking better ways of work.[9] Put more simply: Don't just "automate," obviate – with digital process acupuncture.

Trim the Fat and Build Digital Muscle: Process Acupuncture Releases Massive Cost Savings and Revenue Growth

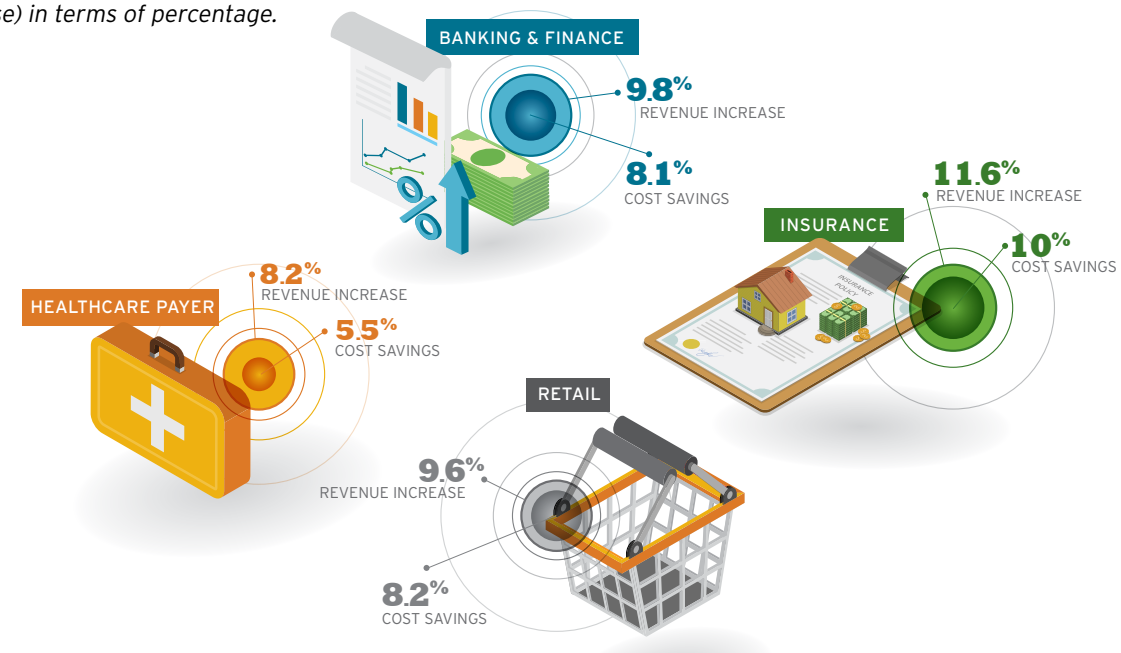
From a quantifiable perspective, the results shown in Figure 1 are stunning, both in terms of addressing the pressure points of cost, as well as building the muscle of revenue growth.

Board-level executives and the C-suite should take note:

- **Only a small minority stood still (or went backwards) in terms of revenue impact:** The vast majority of executives said their organizations had experienced significant gains in revenue and cost reduction as a result of process digitization.

Digital Process Change Drives Significant Top- and Bottom-Line Impact

Respondents were asked to estimate average cost decrease (or increase) and average revenue increase (or decrease) in terms of percentage.



Response base: 281 (respondents experiencing revenue growth due to digital process change); 200 (respondents experiencing cost reductions due to digital process change).
Source: Cognizant Center for the Future of Work
Figure 1

Quick Take

White Castle: Digitally Redefining Customer Relationships

Founded in 1921, White Castle is a family-owned regional fast food restaurant chain in the U.S. that is examining how digital technologies might redefine its customer relationships. In an important first step to digital process acupuncture, the company has begun deploying Apple Pay. But the process benefits extend beyond merely the transaction, as the digital approach has set the foundation for a far more interactive, and insightful, relationship with customers in terms of how they buy, pre-order and think about White Castle's products.

The incentive to digitize payment was two-fold: the company needed to replace its old credit card reader hardware that was no longer supported, and when it reviewed its mobile apps and looked at the convergence of what customers wanted, it was clear that Apple Pay provided a better solution in the long term.

White Castle took six months to deploy Apple Pay, and is now eyeing Android Pay. The true benefit from the digital process acupuncture approach is that its mobile app can now enable customers to order ahead, and leverage that capability to better understand their buying patterns. This new capability also helps it optimize its processes, with powerful digital feedback loops.

Now, instead of viewing technology as a cost, the company sees digitization as a way to generate sales. By augmenting the customer relationship with digital technology, White Castle has enabled valuable conversations around how it can go to market – internally and externally – in the digital age. For example, it is now updating its mobile app with beacon technology to deliver location-specific services.

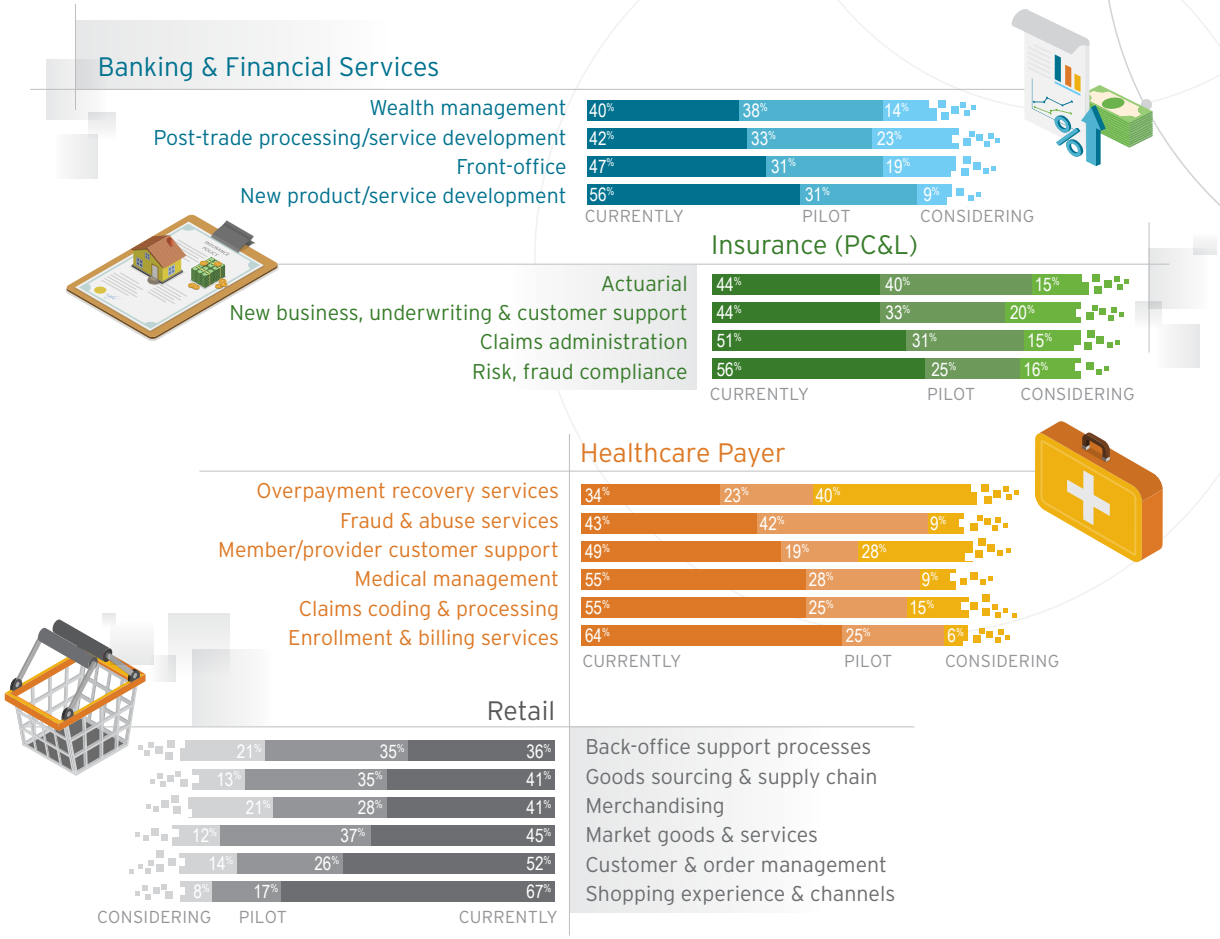
Culture change is key to White Castle's success with digital process acupuncture. For example, siloed-thinking can no longer be tolerated. If the technology culture isn't collaborative, it cannot accomplish the vital integration between marketing, construction, consumers, supply chain management, IT and team members. White Castle continues to work at becoming comfortable with testing, trying, failing – and leveraging initial experiences to lead to learning.

Only 2% said their revenues decreased, and 11% said revenues neither increased nor decreased.

- **For some, revenue gain entailed cost pain:** The revenue lift wasn't without a cost for some respondents. Approximately 11% said their process costs actually rose, particularly for banks (performance – like freedom – isn't always free). In fact, 27% of respondents said their organization's costs were a net wash – they neither increased nor decreased.
- **Strategic alignment is critical for discovering, curating, triaging and acting on new ideas.** For many, the compass points for digital change orient directly with the customer experience. Most of the outliers that either saw revenue increases of greater than 15% or cost decreases of greater than 10% were from the banking and capital markets industry. Specifically, banks in this group said they focused on pressure points in their new product/service development processes. Similarly, in PC&L insurance, outliers mostly cited revenue increases or cost decreases in the claims administration process. In retail, the emphasis among outliers was on the shopping experience and channels to drive revenue gains.

Pervasive Process Potential: Actual Digitization vs. Pilots in Flight

Percent of business processes that have already been digitized, as well as those being piloted or considered for process digitization.



Response base: 321
Source: Cognizant Center for the Future of Work
Figure 2

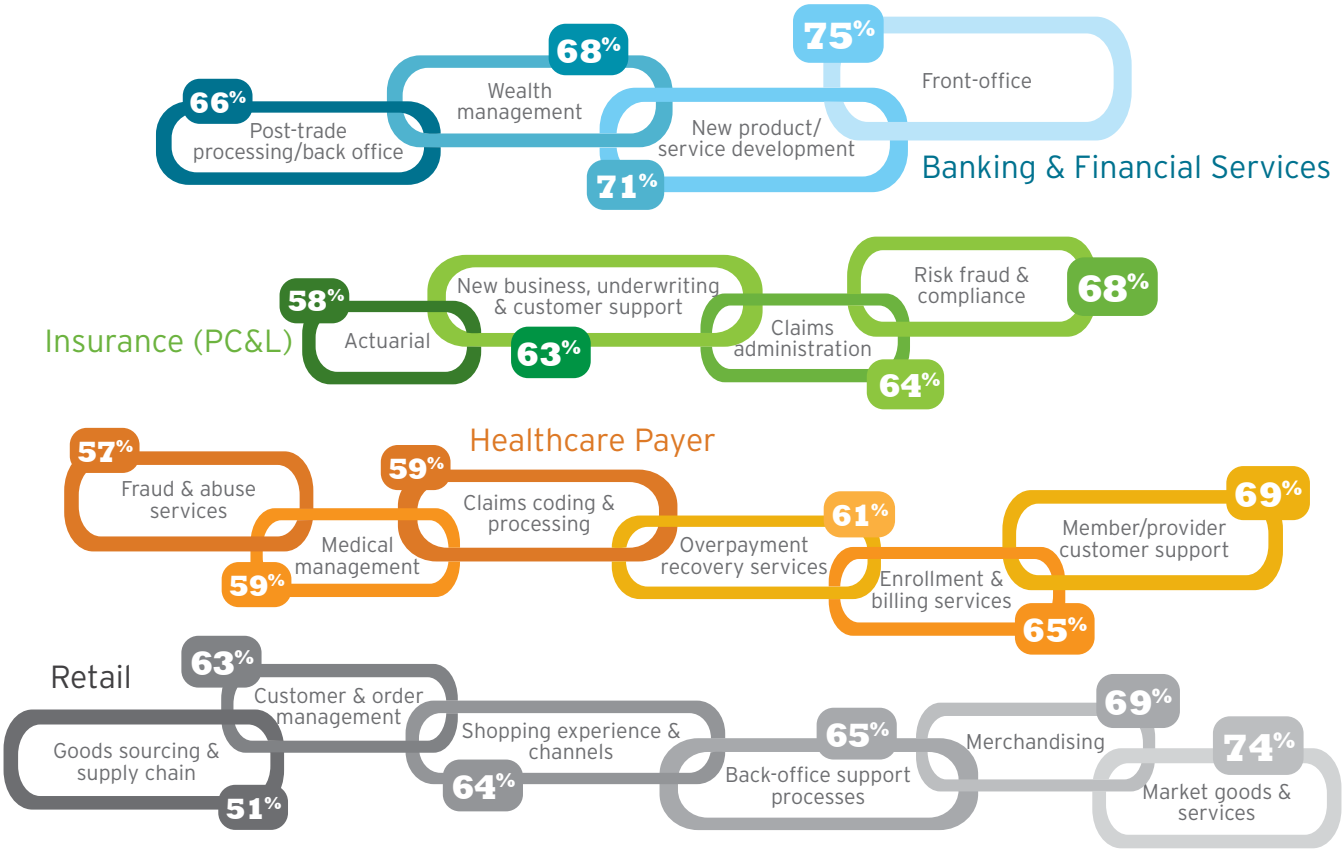
Smart Leaders Apply Digital Treatments to Customer Pressure Points

We asked leaders to identify the business processes they had already digitized, implemented pilots for or were considering digitizing. The majority of process digitization efforts were targeted at front-office B2C functions, whereas new pilots were migrating upstream, to middle-office processes that often impact B2B value chains (see Figure 2). To re-invent those B2B operating models, these businesses will need to re-imagine the process and re-think the future of the work processes that surround them. As one Forrester analyst recently put it, when it comes to digital: "In the software-is-the-brand world, B2C is the initial earthquake of change and B2B is the tsunami that results as the digital shockwaves work across the associated supply chains."[10]

In order to stimulate change, respondents clearly focused heavily on processes that target customers first.[11] This comes as no surprise, as an enduring mantra for digital process transformation is to put the customer, process constituent (partners, suppliers, employees) or even "thing" (shop floor logistics, trade management) at the center of real change to improve agility, revenue and costs. This may seem like a winning approach whose only applica-

Putting Customers in the Center of the Value Chain, Digitally

Percent of respondents citing "significant" or "high" levels of process/value chain integration, as a result of digitized processes.



Response base: 321
Source: Cognizant Center for the Future of Work
Figure 3

tion is for the cool kids in Silicon Valley, but to earn a competitive edge, all companies — regardless of industry or geography — need to adopt customer-centric digital process change that can ripple across value chains, and digital process acupuncture can be a great way to get going.

Driving Revenue, Closing Gaps

The leading benefits cited by respondents were related to improving value chains surrounding customer-facing and front-office functions. Examples include marketing goods or services for retailers, front-office pursuits for banks, and member/provider customer support for healthcare payers.

In other words, the biggest opportunity to spark positive change lies in applying a targeted digital remedy to close the gap between the organization and its customers. Outdated processes coupled with inaction will only drive a wedge. If that happens, your organization is leaving money on the table, or even putting the company's future at competitive risk.

In fact, well over half of our survey respondents said digital process initiatives have resulted in significant or high levels of process value chain integration (see Figure 3). C-suite leaders must begin to evaluate how digital process change can ripple

through the value chain — or risk missing out on a powerful new method for augmenting customer loyalty and improving operational efficiency to drive top- and bottom-line performance.

Already, process digitization strategies are moving rapidly into traditional business sectors, changing the basis of competition throughout many industries:

- **Banks are focused on revenue generation:** Roughly 56% have already digitized product/service development. Front-office processes follow closely, with 47% driving strategies to foster the "bank of the future."
- **PC&L insurers have targeted the "leaky sieve" of fraud,** with 56% prioritizing digital risk and fraud compliance. Using real-time digital documentation, they can support "pay-as-you-drive" initiatives or collect usage patterns derived from smart home telematics. Additionally, 51% have already digitized innovative claims management approaches.
- **Healthcare payers' enrollment and billing are highly digitized:** Because private healthcare exchanges made legacy systems and processes a burden, many health insurers (55%) are investing in better managing complexities in verification, adjudication and claims processing. As a result, 64% have already digitized enrollment and billing services (with a potential lift for providers' revenue cycle management, as well). Interestingly, current digitization of fraud and abuse prevention processes are low compared with PC&L insurers, but they appear to be on the industry's radar, with major piloting initiatives underway (42%).
- **Retailers are focused on shoppers:** The emphasis for retailers is on frontline B2C channels and experience, with 67% currently digitized. Back-office digitization is comparatively low (36%); other industries seem to have taken digital process acupuncture thinking to middle- and back-office processes, suggesting that most retailers may be overlooking options for significant cost savings.

It is clear there is a burning platform in place, and the flame is high. Action is required now — not "maybe someday." Figure 4 (next page) reveals the most important drivers of digital process change, ranked in order of priority, by industry. Even more vital is the anticipated timing of the action: On average, well over half of respondents, across all industries, believe digital change needs to occur in the next 12 months, not in the next one to five years. Not surprisingly, banking and capital markets respondents are more likely to take fast action on digital process change than other vertical industry respondents.

Well over half of our survey respondents said digital process initiatives have resulted in significant or high levels of process value chain integration.

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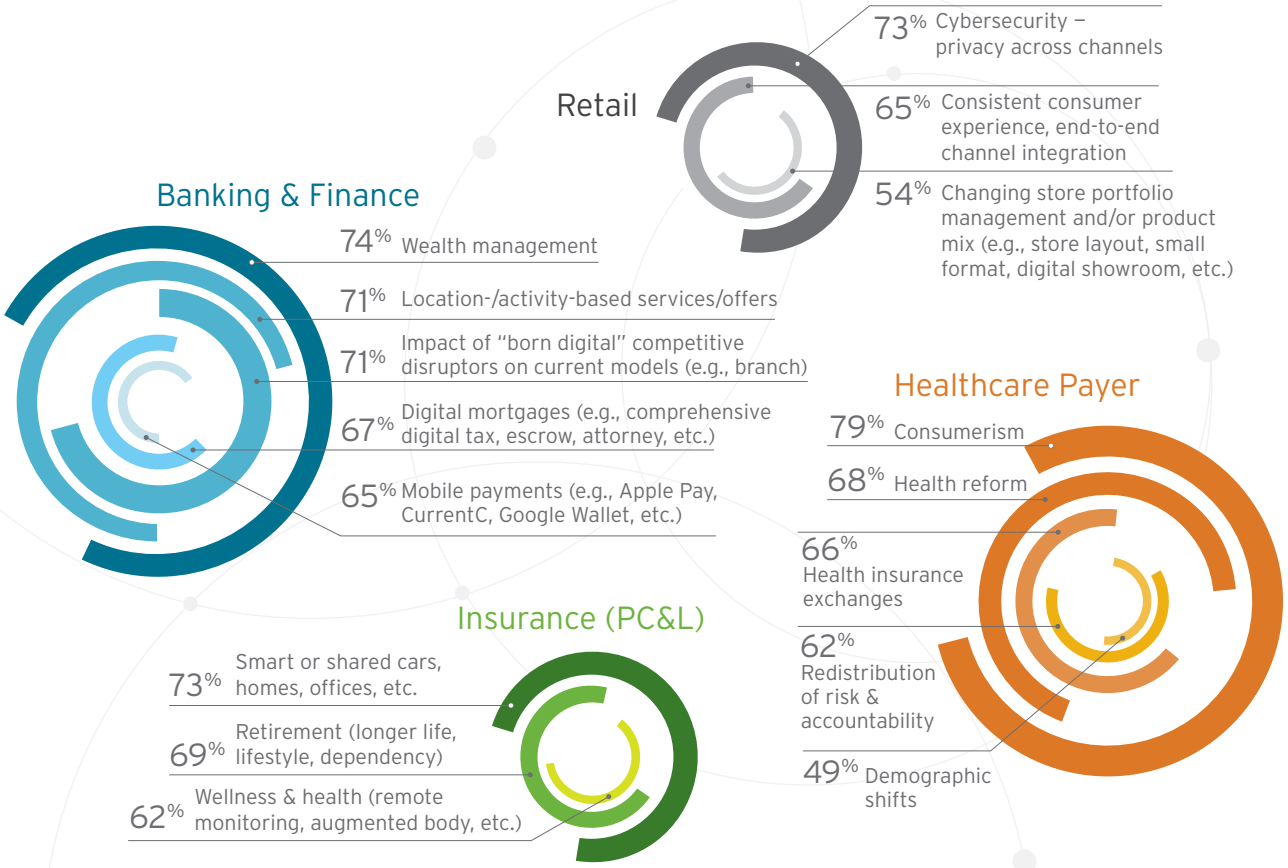
Business Goals Are Clear – And the Time to Act Is Now

Percent of respondents who rated the following drivers of digital process change as highly important.



Response base: 321
Source: Cognizant Center for the Future of Work
Figure 4

Treatment Benefits: Process and Value Chain Integration

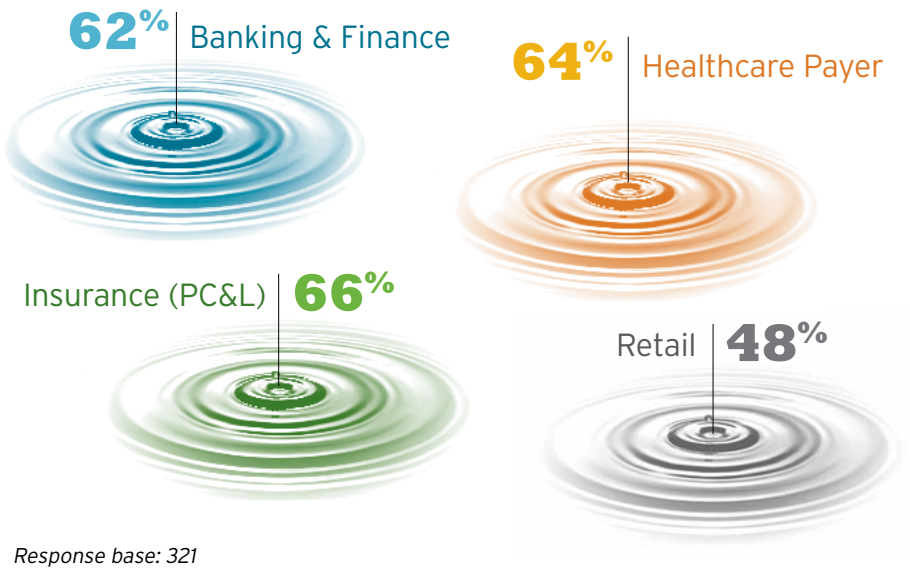
Ultimately, the benefits of digital process acupuncture are only as good as the treatment's ability to produce results across the value chain.

Among insurance companies, 66% cited improved integration as a key benefit (or expected benefit) of process digitization (see Figure 5, next page). Following closely were healthcare payers at 64%, and banks at 62%. Retailers were less sanguine, at 48%. When coupled with other top-rated outcomes (especially increased revenue among healthcare payers, and cost cutting/efficiency for banks and retailers) it is easy to see the compounding impact to be gained from digital initiatives that affect the value chain. Examples include the use of drones to enhance insurance risk information, or the impact that roboadvisors like Betterment and Wealthfront are having on highly-paid personal wealth advisors.

Precise targeting of digitization within the process value chain can substantially eliminate friction points, all of which impact the speed of problem resolution or boosting process performance.

Benefits Ripple through the Value Chain

Level of impact (or expected impact) on improving value chain integration, as a result of digitizing pieces of a process value chain. (Percent of respondents rating the digitized process as returning high or very high value.)



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Source: Cognizant Center for the Future of Work
Figure 5

The Healing Touch: A Variety of Techniques Produce Value

The endgame of digital process acupuncture is to close the gap between customers, suppliers, partners and fellow employees. Businesses need to meet these process constituents where they are — not where the company's arthritic, legacy processes may want them to be. That's why it's essential to engage the right digital channels in order to close the "last mile" of the digital process gap.

Processes are becoming intertwined, and process constituents demand and expect digital approaches to accommodate how they work, engage interact — and experience. Businesses everywhere are using digital approaches to stitch together more tightly coupled, informed and personalized experiences.

The approaches used to digitize functions are as varied as the industries themselves, and include everything from gamification and contests, to AI, location services and personalization (see Figure 6, next page). Respondents note their organizations tend to better integrate the value chain from a front-office and customer-facing perspective.

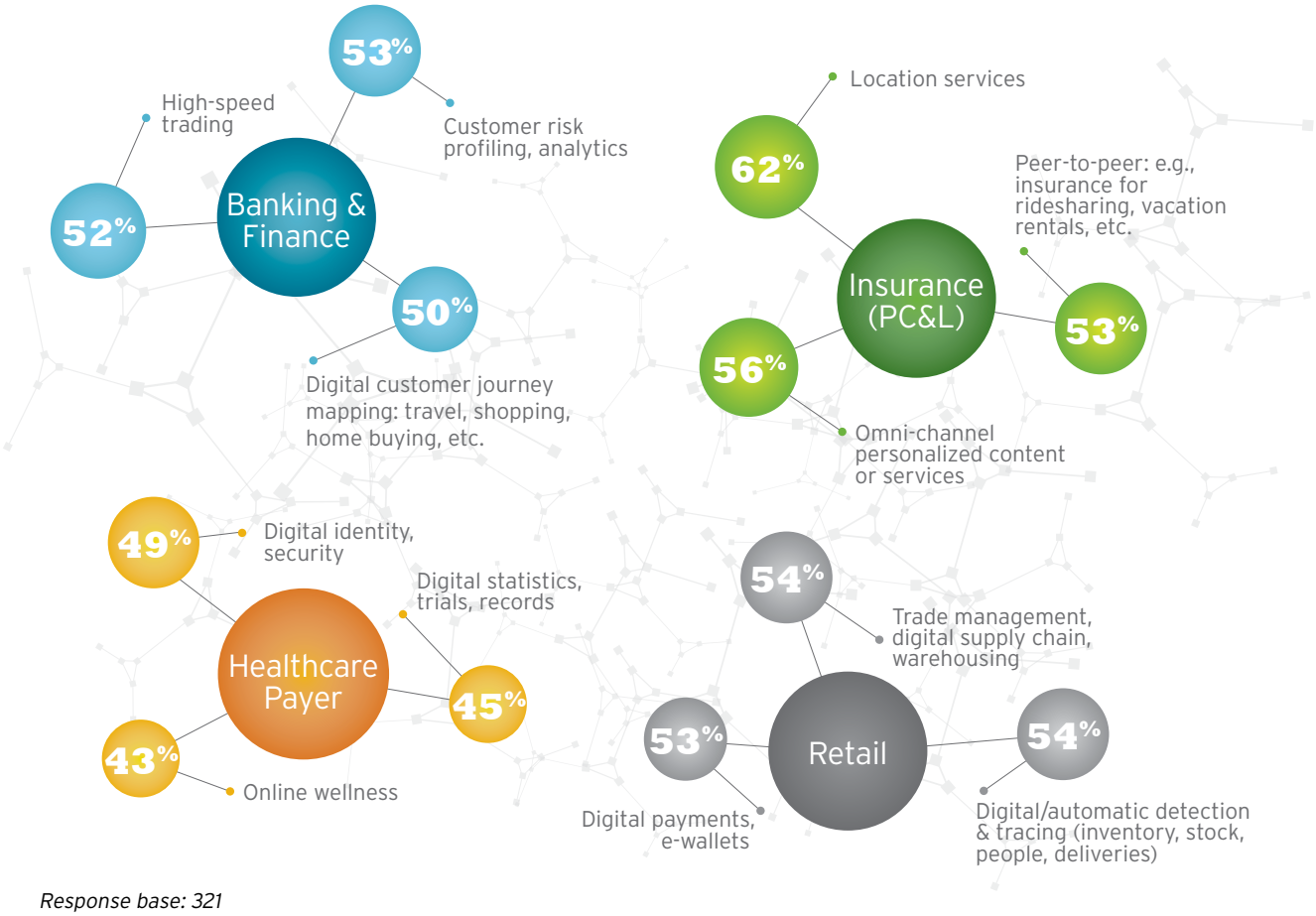
C-level executives and functional process executives need to avoid being dazzled by digital's seemingly magical properties unto themselves, and stay focused on the prize: the process outcomes they drive.

The question remains, however, as to what's having an impact, and what's not? C-level executives and functional process executives need to avoid being dazzled by digital's seemingly magical properties unto themselves, and stay focused on the prize: the process outcomes they drive.

By taking small steps — in essence, applying the principles of digital process acupuncture — organizations can overcome inertia. For example, if your organization is not doing process robotics because AI seems overwhelming, you're not alone. But

Solutions, Services and Approaches to Digitize Processes

Percent of respondents citing digital process solutions, services or approaches already in use.



Response base: 321
Source: Cognizant Center for the Future of Work
Figure 6

applying robotic automation tools is one easy step to take on the journey toward intelligent process automation; for instance, organizations can start with machine learning and AI to run algorithms that analyze customer credit worthiness or spot tumors in medical scans in real-time. Such approaches can deliver millions of dollars in savings.[12]

Respondents also see tremendous value in combining their data with third-party supplier information, as well as actively collaborating with customers and suppliers digitally through co-creation of products and go-to-market approaches. (For more on this topic, see our recent research report "The Rise of the Smart Product Economy."[13])

Data Security – and Quality – Are the Biggest Hurdles to Digital Process Acupuncture Value

In a very real way, change on this scale isn't merely about the shift to digital models; value is also gained through the data – the code – that emerges from the newly remediated processes that can help make people smarter. Whether it's the IoT, telematics, sensors, robotics or AI, all of these technologies can be applied to

Quick Take

American Nuclear Insurers: Pre-Packaging and Delivering Contextually Relevant Information

Like many insurers, American Nuclear Insurers (ANI) has more data than it often knows what to do with. In order to optimize performance, the organization knew employees needed the ability to access the right information, at the right time and place, at specific junctures of their business processes. That's why the organization – a joint underwriting association supported by some of the largest U.S. insurance companies' pooled financial assets to provide global coverage – embarked on a digital process acupuncture-like initiative, starting with its emergency response process.

ANI's emergency response process requires a multiplicity of documents and document types that cover the insured facilities, regulatory and other government agencies and industry organizations that would be involved in an emergency. However, only a small subset of these documents – such as checklists, policies or procedures – would be critically important during the event. In the past, it might have been acceptable for ANI to say, "Those documents are on SharePoint, in that document library, complete with their 5 to 10 bits of metadata." Today, however, the capabilities exist for ANI to be much more targeted – and effective – in its approach.

The need to reduce the amount of information delivered at a critical moment became clear during one of the many drills ANI performs. Information was put in front of employees, who responded by asking, "But what information do I really need? I don't need all this metadata on how many times the document has been revised or who wrote it. I just need the document." For each scenario – an emergency, a training session, a drill or an administrative task – there was a different information need.

Consider a contact list of who needs to be called at different stages of an emergency – should meetings be face-to-face or with the entire group? Or suppose a particular group needs to be e-mailed when an event occurs – what if the coordinator doesn't remember the group name of the distribution list or how many people are in the group?

To close these gaps, ANI developed natural language links on all platforms, matching the user's intent to the right group. Communication options were tailored to each platform. For example, while using SharePoint on-premises, a phone number seamlessly lets employees place a Microsoft Lync call from their desk phones and SharePoint online, and the iPad app reveals the name of the caller from a given the number. And, of course, on an iPhone, the presentation of the number easily, seamlessly and quickly lets you place a call or send a text message.

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The remedial impact of applying digital tools to process pressure points is now coursing through the company, as ANI is leveraging the success with its emergency response group to demonstrate the capabilities to other departments. Down the road, ANI hopes to do this for every individual process in the enterprise, and for everything each employee does at every moment of the day. As a result, work will become an organizing principle for information.

ensure processes are more effectively analyzed and executed by smart machines informed by data-rich code. Leaders clearly recognize that importance and distinction – and also the associated security and quality challenges (see Figure 7).

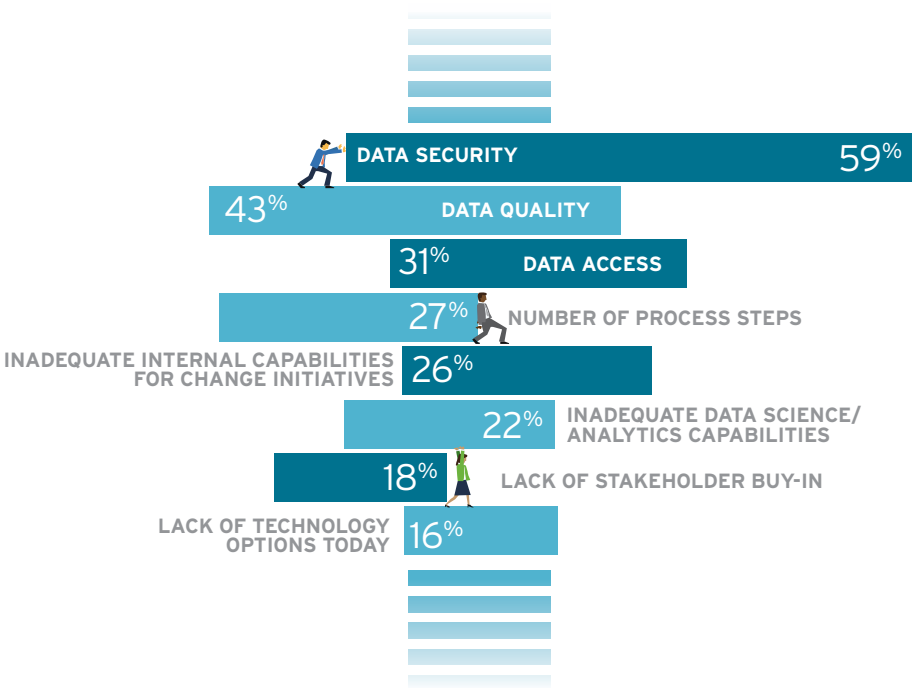
- **Data security tops all challenges related to digital processes – by far.** Roughly 59% of respondents cite data security as the chief issue today. As digital processes proliferate, and as leaders see the value they create, an entirely new ecosystem of value-added services will develop to ensure the security, risk, privacy and compliance of the value chain of information these processes generate.
- **Garbage in, garbage out:** Approximately 43% of respondents see data quality as a material challenge. Error, inaccuracy and imprecision can make or break any attempts at digital process change, whether acupuncture is applied or not. Worse, errors left unchecked can render the results of analysis almost worthless.

Acupuncture Specialists Can Help Heal Enterprise Processes

Like a Tesla breaking 0-to-60 acceleration records in "Ludicrous Mode," the pace of digital change is accelerating, and leaders are seeking guidance. Relying on internal capabilities alone won't be an option for most. Chances are, most businesses will need partners to help design, build, deliver, scale and curate ideas based on processes, newly invented digital tools or developments in wearables, sensors, 3-D printing, etc. As Figure 8 (next page) highlights, companies in our survey are utilizing a wide array of providers in their initiatives.

Obstacles to Process Digitization

What are the biggest challenges associated with your efforts to digitize processes?



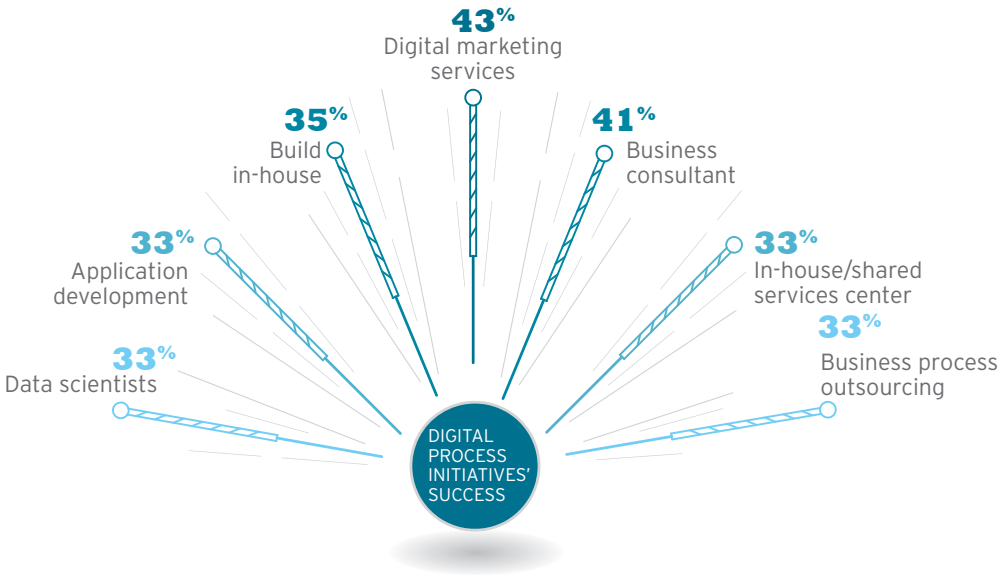
Response base: 321
Source: Cognizant Center for the Future of Work
Figure 7

In the future, it is highly likely that the market will augment older sourcing models with new-breed options, such as business process as a service, mobile and cloud-based platform services, and crowdsourcing models. Likelier still are enterprise-grade process templates like "if-this-then-that" (IFTTT) recipes to ensure that a wide palate of B2B and B2C process connection points capture and leverage all requisite digital process inputs and outputs.

Even tried-and-true mechanisms such as application program interfaces (APIs) still have runway. In fact, recent research shows that few companies use API traffic analysis to understand customers' online and offline purchase journeys despite the fact that this technique is an essential part of understanding digital profiles and a core element of the personalization algorithms driving the digital economy.[14]

Stitching Together the Process Value Chain

Which of the following sources or types of providers will be important in your digital process initiatives?



Response base: 321
Source: Cognizant Center for the Future of Work
Figure 8

From Symptom to Cure: Applying Digital Process Acupuncture to Reinvigorate Business

Our study suggests that digitizing a process doesn't need to start as a radical, invasive undertaking. Through targeted approaches and a thorough understanding of how processes interconnect and interact, businesses can use digital technologies to change a process or experience to drive major business impact. At the same time, digital process acupuncture disrupts the "old way of doing things," and is all about optimizing processes that can efficiently and effectively move the needle on business strategy.

If your leadership team is not building key portions of the business on the principles and realities of digital-first processes, then your organization is at risk of being usurped by competitors that are. Even among the minority of executives for whom a digital-first mindset isn't on the agenda, digital transformation is viewed as important.

Where can your team begin? Deconstructing end-to-end processes and putting customers at the center can help businesses get beyond the inertia of inaction and take the small steps that spark digital process acupuncture's momentum. Consider the following as a simple, yet effective checklist to begin the assessment:

- **Focus precisely:** Find the process pressure points that will elicit the most value. Precision at the process and experience level is critical to avoid "boil the ocean" programs. Common pressure points can be found in the gaps between the physical and digital worlds; digital process change often integrates these worlds by instrumenting, accelerating and digitally linking a seamless value

Quick Take

The University of Kentucky: Digitally Enabling Student Retention

Universities are widely perceived as being behind the curve when it comes to adopting and deploying modern managerial techniques and technologies. The University of Kentucky is an exception to this rule. In an interview for this study, Dr. Vincent Kellen, Senior Vice Provost, Analytics and Technologies, said he believes that all journeys – but particularly digital ones – begin with one step, not 1,000. Kellen is a "big fan of incrementalism, which doesn't mean non-revolutionary or non-major evolutionary; it just means you have to go at this in an acupuncture way."

Kentucky uses a predictive "K score," which lets students know how much they interact with the university. In this way, the university is asking, "How are we doing now, and what can we do now?"

This is the mentality Kellen applied to a big priority of his: student retention. "We did not boil the ocean. We worked on a very strategic spot of it," he says. The CIO could have said, "Let's get rid of paper and improve our business processes" or "Let's look at our procurement cycle." The number one thing IT had was data, and the group's leaders made sure the university could correlate how different behaviors could be linked to the measurement of a business result. But digital process acupuncture – in this case, leveraging proactive outreach via social media – was the critical "pinprick" needed to get the right data to fuel a predictive model to prevent students from dropping out.

Specifically, while most universities approach student retention after-the-fact, Kentucky took a proactive approach. Ordinarily, retention-boosting efforts start by analyzing the data of students who drop out and apply the findings to the future, in effect asking, "How are we doing, and what can we do better?" Kentucky, however, uses a predictive "K score," which lets students know how much they interact with the university. In this way, the university is asking, "How are we doing now, and what can we do now?" It's the critical piece of the equation, and it's obtained using digital process acupuncture in the form of social media.

For example, every time students open the app to check their course schedule or the date for the next Wildcats game, they may be faced with a quick question: Have you bought all your textbooks already? Do you own a tablet? On a scale from one to five, how stressed are you? In five weeks, students had answered those and other questions more than 40,000 times. Students can ignore the mini-survey, but response rates range between 50% and 80%.

Furthermore, if a student stops uploading assignments to Blackboard Learn, the mobile app sends an alert that can only be cleared once the student meets with the professor or an adviser – and completes the work.

To enable the K score, the school merged its institutional research and business intelligence teams in March 2012, hired three data scientists, moved to a real-time analytics platform and rebuilt the institution's mobile app, which serves as a digital gateway to the university and collects crucial bits of information about students. Kentucky's freshman to sophomore retention is up to about 81.5%, an increase of about 1.3 percentage points.

Businesses should focus on creating the means to drive rapid innovation by connecting technology, data science, devices, design and business strategy to change a business process or customer experience.

chain. Businesses should focus on creating the means to drive rapid innovation by connecting technology, data science, devices, design and business strategy to change a business process or customer experience. Consider journey mapping and design thinking as critical parts of any initiative to understand the best process pressure points for maximum outcome.

- **Create a lab as a "play-space" for innovative digital processes:** What can be learned from other industries? (What if manufacturing was done by Uber? What if retail was done by Airbnb?) Imagine having a dedicated space for collaboration and ongoing experimentation for new approaches and services that can be brought to new markets. Doing so can facilitate breakthrough thinking. Ideas and innovation are the key success metrics, and great ideas often emanate from disparate functions and take time to incubate and then implement and make real. Make sure to give these efforts autonomy and buffer them against staid, old-guard approaches — with a direct line of reporting to the CEO — so that old ways don't kill it off during a downturn or when concerns are raised about ROI.[15] The lab can continuously spark ideation, which can quickly lead to prototyping, which, in turn, can give way — quickly — to pilots and real, scaled implementation.[16]
- **Find the points from which the money flows.** Whether it's your underwriting process, clinical drug trials, wealth management service, supply chain or customer relationship management process, focus on work that shapes at least 10% of your costs or revenues. To seize competitive advantage, look at the data that is — and could be — exchanged and used for value.
- **Promote the IT function as the "hero" — make them your champions of digital process acupuncture.** Corporate IT is increasingly strategic and central to operations. But it's essential to engage IT in a way that maximizes investments while cutting over to new delivery and organizational models that augment digital process change. While obtaining senior leader buy-in is important, even more crucial is having talent "in the trenches" to execute and take ownership of necessary work that needs to get done. Take field trips — see the art of the possible by investigating how others have successfully moved in this direction. Learn what worked and what didn't, and how problems were solved.
- **Strike new, innovative partnership approaches.** Develop new corporate structures that minimize the risk of working collaboratively. New partnership models will evolve to reduce development costs, access external capacity and share the risk and reward from integrated product development. Success will be achieved by companies that offer the best set of integrated services to capture customer spending or spot a new market opportunity. Mastery of proprietary and third-party data counts immensely.[17]

Final Thoughts, and a Look Forward

Process change today really does look, feel and act differently from the past. The tried-and-true linear, orthodox approaches may fall woefully short when exponential changes seemingly occur with each passing quarter. Given the magnitude of the massive change wrought by digital to customer, supplier and employee relationships, not to mention society at large, the stakes of taking a false step may seem terrifyingly high.

> Be prepared to fail – often – while making sure those failures are "good failures," from which you can learn on the road to success.

Embarking on digital process acupuncture can seem scary. But unless executives are honest about the need to get started by identifying process stresses that can be alleviated through this approach, they are going to simply be spectators to the changes around them, as incredible opportunities slip further and further away.

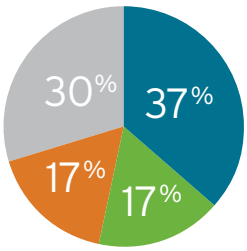
What matters most is lasting outcomes that can result in sustained health and rejuvenation of the whole business – that's why a digital process acupuncture approach can be such an effective way to get going. Be prepared to fail – often – while making sure those failures are "good failures," from which you can learn on the road to success. But whatever you do, get moving – break the inertia through pilot efforts – and commit to pervasive and lasting change.

Businesses that are already embracing process digitization are capturing more data, improving work and generally empowering workers to be more effective at their jobs. In the words of Aaron Levie, co-founder and CEO of content and file-sharing services provider Box: "Adding software to a broken process doesn't make you digital. The biggest challenge is reimagining the process, not writing the software."[18] Instead of performing reactive, major surgery on a struggling end-to-end business process, consider undertaking digital process acupuncture to heal and energize the new digital enterprise.

Appendix A

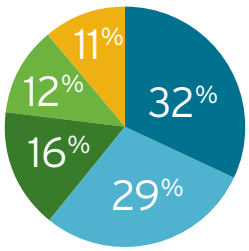
This study was conducted across a variety of sectors, functions and geographies.

Sectors



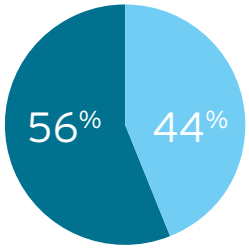
- Banking and Finance
- Insurance (PC&L)
- Healthcare Payers
- Retail

Functions



- Process Owners (SVP, VP, Senior Director)
- Process Owners (Heads of Operations)
- CIO
- CXO (General Management)
- Chief Sourcing Officers

Geography



- North America
- Europe

Note: Percentages may not total 100% due to rounding.

Appendix B: Research Methodology

Online panel-based research was conducted with 321 decision-makers from companies across North America and Europe in several industries: banking and capital markets; property, casualty and life insurance; healthcare payers; and retail. Company size was $500 million to $3 billion in revenue. The research was conducted over four weeks by an independent research agency (E2E Research) on behalf of Cognizant.

Areas studied include:

- Current and planned digitization initiatives or pilots, by process (list of processes provided in Appendix C).
- Process-specific benefits of digitization, for those that have already digitized, as well as those piloting/considering digitizing.
- Importance of trends that drive digital process change, and likely timing of action.
- Sources or types of providers that will be important in digital process initiatives.
- Overall impact (or expected impact) of digitizing pieces of process value chains.
- Challenges associated with efforts to digitize processes.
- Quantitative impact on revenue growth and cost reduction from digitization of the process value chain.

Appendix C: Process Definitions

Banking & Capital Markets

- New product/service development
- Post-trade processing/back-office
- Front-office
- Finance and accounting
- Wealth management

Insurance (PC&L)

- Risk, fraud and compliance
- Actuarial
- Claims administration
- New business, underwriting & customer support
- Risk, fraud and compliance

Appendix C: Process Definitions *continued*

Healthcare Payer

- Fraud & abuse services
- Medical management
- Overpayment recovery services
- Claims coding & processing
- Member/provider customer support
- Enrollment & billing services

Retail

- Shopping experience & channels
- Market goods & services
- Customer & order management
- Goods sourcing & supply chain
- Merchandising
- Back-office support processes

Footnotes

[1] We defined process digitization for the purpose of this study as the following: The changing of B2C or B2B processes to more effectively engage a process constituent or improve a customer experience by integrating the physical and digital worlds with automated process steps, data science, strategy and design, using a digital technology such as social, mobile, analytics and cloud, sensors, the Internet of Things or "smart" homes/cars/equipment, etc. to instrument, accelerate and digitally link a seamless, end-to-end process value chain.

[2] In their seminal book *Switch*, Chip and Dan Heath counsel companies to "find the feeling" and then "shape the path" toward execution that sustains real change – in other words, to move from recognizing something "needs to happen" to "making something happen."

[3] "Cutting Through Chaos in the Age of 'Mobile Me'" Cognizant Technology Solutions, November 2015, http://www.cognizant.com/InsightsWhitepapers/Cutting-Through-Chaos-in-the-Age-of-Mobile-Me-codex1579.pdf.

[4] "Future-Proofing Insurance: Deepening Insights, Reinventing Processes and Reshaping Services," Cognizant Technology Solutions, December 2014, http://www.cognizant.com/InsightsWhitepapers/Future-Proofing-Insurance-Deepening-Insights-Reinventing-Processes-and-Reshaping-Services-codex1122.pdf.

[5] Janelle Hill and Samantha Searle, "Beyond Automation: Digitalization Changes Business Process Design and Execution," Gartner, Inc., Aug. 14, 2015, https://www.gartner.com/doc/3112919/automation-digitalization-changes-business-process.

[6] Phil Wainewright, "The Spectre of Process Deflation Haunting U.S. Enterprise," Diginomica, Dec. 22, 2015, http://www.diginomica.com/2015/12/22/the-spectre-of-process-deflation-haunting-us-enterprise/.

[7] "The Robot and I: How New Digital Technologies Are Making Smart People and Businesses Smarter by Automating Rote Work," Cognizant Technology Solutions, January 2015, http://www.cognizant.com/InsightsWhitepapers/the-robot-and-I-how-new-digital-technologies-are-making-smart-people-and-businesses-smarter-codex1193.pdf.

[8] Robert H. Brown, "Moore's Law, Speed and Robotic Process Automation," Cognizant's Center for the Future of Work, Aug. 11, 2015, http://www.futureofwork.com/article/details/moores-law-speed-and-robotic-process-automation.

[9] Michael Hammer, "Reengineering Work: Don't Automate, Obliterate," *Harvard Business Review*, July-August 1990, http://www.hbr.org/1990/07/reengineering-work-dont-automate-obliterate.

[10] John McCarthy, with Pascal Matzke, "The Digital Agenda Comes To B2B Industries," Forrester Research, November 2015, https://www.forrester.com/The+Digital+Agenda+Comes+To+B2B+Industries/fulltext/-/E-res127001.

[11] For example, Coca-Cola sponsored a "Happiness Flag" for the trophy tour of the 2014 FIFA World Cup in Brazil, a physical flag based on thousands of digitally-incepted images. People shared how they felt about it, and Coke used expert analysts in its social listening function to track marketing sentiment based on the one specific reference to Coke in the context of World Cup football. See http://www.forbes.com/sites/steveolenski/2014/06/12/how-coca-cola-is-spreading-happiness-at-the-2014-world-cup/.

[12] "The Robot & I: How New Digital Technologies Are Making Smart People and Business Smarter by Automating Rote Work," Cognizant Technology Solutions, January 2015, http://www.cognizant.com/InsightsWhitepapers/the-robot-and-I-how-new-digital-technologies-are-making-smart-people-and-businesses-smarter-codex1193.pdf.

[13] "The Rise of the Smart Product Economy," Cognizant Technology Solutions, May 2015, http://www.cognizant.com/InsightsWhitepapers/the-rise-of-the-smart-product-economy-codex1249.pdf.

[14] "Putting the Experience in Digital Customer Experience," Cognizant Technology Solutions, November 2014, http://www.cognizant.com/InsightsWhitepapers/putting-the-experience-in-digital-customer-experience-codex1180.pdf.

[15] Salim Ismail, Michael S. Malone and Yuri Van Geest, *Exponential Organizations*, DiversionBooks, New York, N.Y., October 2014.

[16] See our video on the Cognizant Digital Works Collaboratory, https://www.youtube.com/watch?v=mJk_MuIAFF4.

[17] "The Rise of the Smart Product Economy," Cognizant Technology Solutions, May 2015, http://www.cognizant.com/InsightsWhitepapers/the-rise-of-the-smart-product-economy-codex1249.pdf?utm_source=perspectives&utm_medium=internal_banner&utm_campaign=perspectives_internal.

[18] Aaron Levie Twitter post: https://twitter.com/levie/status/599045909825982464.

The case studies included in this research report are not necessarily Cognizant clients.

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Acknowledgments

The author would like to thank futurist Thornton May for his contributions to the case studies contained in this white paper.

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