



## Digital Operations

# Intelligent Process Automation

Expand your automation horizon—and your returns—with Cognizant’s comprehensive intelligent automation solutions

### Scale and Mature Your Automation Journey

**Extract more value from your systems, data and new technology with a holistic approach to process automation**

Significant value exists in the spaces between the major business functions your IT organization delivers and your company’s business processes. Humans often occupy those spaces, doing rote, repetitive work required to process data and shuttle information from one system to another. Gaps also exist where older and legacy systems do not integrate well with newer technologies which could amplify their value. Closing these gaps through automation enables companies to open new paths to value, from creating new customer experiences to engaging new cost-cutting levers to mitigating compliance risks. Cognizant has helped hundreds of organizations succeed with these tools and experience measureable business impact, such as:

Know-your-customer bots have reduced screening time by more than 40% for financial institutions.

- Healthcare claims-processing bots have processed 3.8M transactions annually for insurance firms with more than 20%

improvement in auto-adjudication rate.

- Invoice-processing bots have processed over 1.2M invoices annually for retailers and reduced delayed payment interest by more than 50%.
- Revenue-cycle-management bots have improved timely revenue collection by more than 20% for healthcare payment processing.
- Exchange-derivative-clearing bots have processed over \$3B annually for commodity future trades.

Cognizant Intelligent Process Automation (IPA) enables our clients to achieve results like these to create a truly digital workforce. Our extensive automation expertise enables your organization to maximize the value of automation to:

- Increase your competitive edge and develop new customer experiences that compete more effectively against digitally native, fully automated companies who are out to disrupt your industry.
- Enable digital transformation and new technology adoption such as AI, machine learning, blockchain, cognitive intelligence, smart data intake and more without having to retrofit or replace existing systems.

# Cognizant®

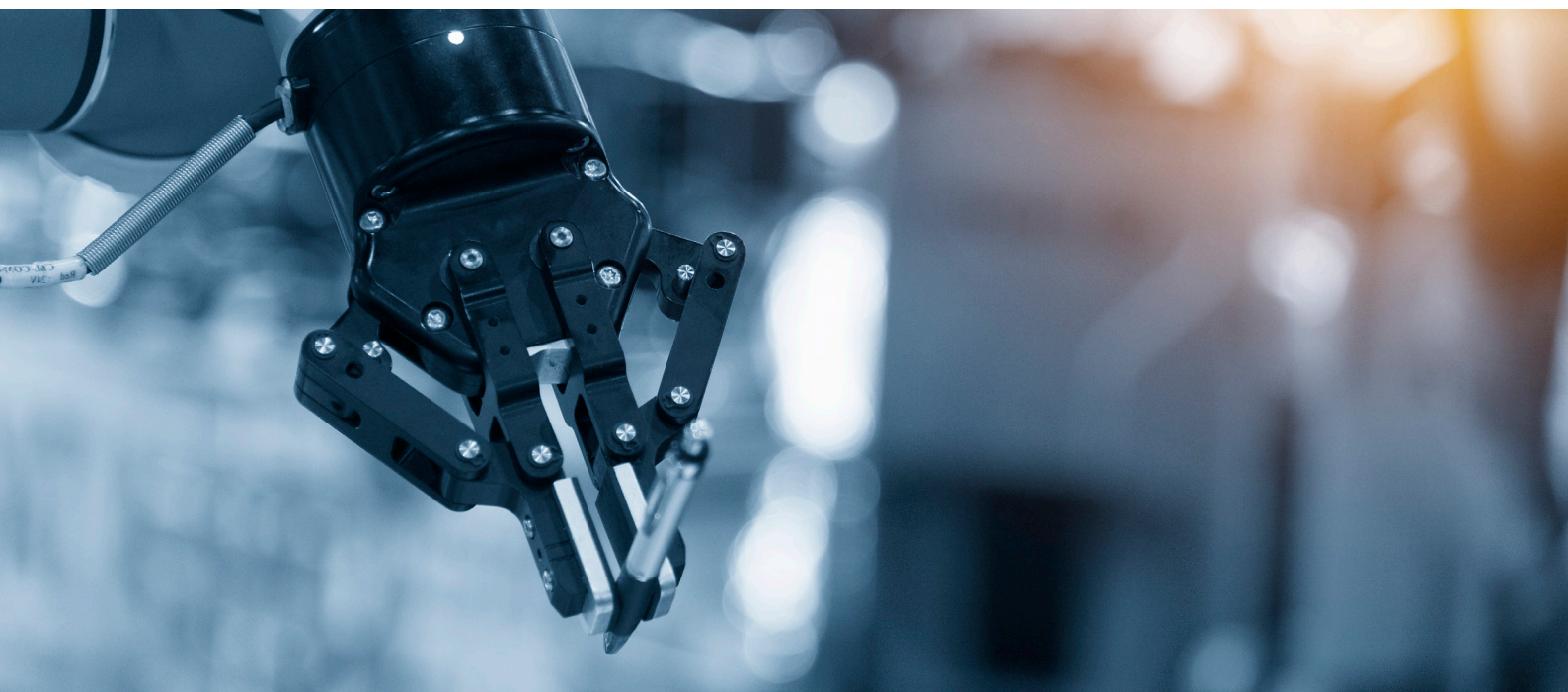
The bots developed through Robotic Process Automation (RPA) will act like glue between the valuable data in the systems and the powerful capabilities of next-generation technology.

- Identify areas of opportunity and applying our industry domain, process reengineering, governance and change management expertise to ensure success.

Fostering an Automation First mindset is key to continued value generation and future gains. Instead of taking a script-writing, piecemeal approach to automation, we help your organization build a holistic automation vision backed by a practical strategy. We can guide your enterprise as it develops an IPA group that builds a project pipeline by training business users to identify existing value-laden areas ideal for

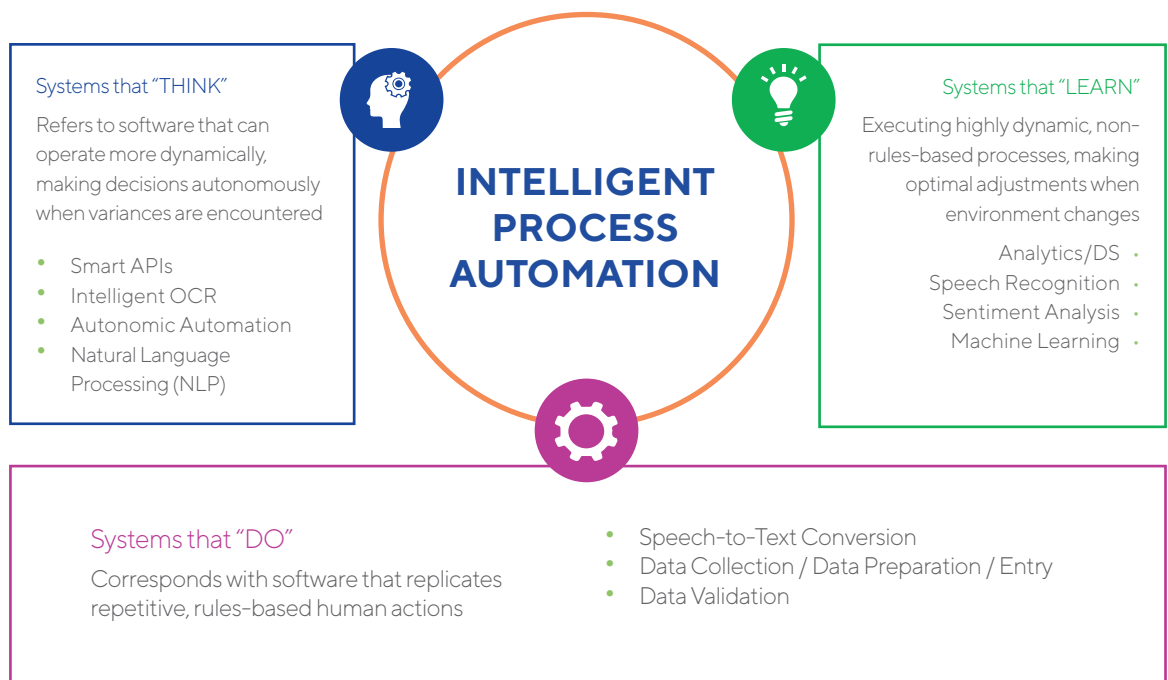
automation. That group can also help the business take an Automation First approach when creating new customer experiences and internal workflows. We ensure sustained success by helping your company develop an industrialized approach to automation, starting at a scale the organization is comfortable with and developing and perfecting a repeatable approach to deployment that will easily scale as projects increase in scope and impact. Our change management experience helps ensure employee support for automation throughout the organization. We are technology agnostic, partnering with leading automation innovators to ensure that we can provide the comprehensive solution your organization requires.

Ensure automation generates maximum value for your business now and as it grows. Automate intelligently with Cognizant.





# Cognizant Delivers Solutions Across the Automation Continuum



## What We Offer You

# Operations automation and business results at scale

Experience true operations transformation with Cognizant's intelligent automation solutions—spanning strategy creation through implementation and maintenance.

### Advisory Services

We help your organization develop an outcome-driven automation strategy; identify processes with high return value using our simplification, standardization and elimination criteria and use a structured approach to calculating ROI to set realistic expectations and priorities. Our advisory offerings include:

#### Vision and Strategy

- Automation Vision.
- CxO Automation Advisory.
- Automation Strategy and Roadmap.
- Automation Maturity Assessment.
- Automation CoE Setup.
- Business Case / ROI.

#### Blueprint

- Automation Blueprint.
- Platforms Solution Architecture.
- Product Selection.
- Proofs of Concept.

### Implementation Services

We use agile and minimum-viable-product methodologies for faster time to production and benefit realization.

#### Transform

- Product Implementation.
- Industry-Specific Solutions.
- Integration Services.

### Digital Workforce Management Services

Our Center of Excellence and strong governance models accelerate automation deployment throughout your organization by standardizing automation approaches, delivering reusable components and aligning new initiatives with business objectives.

#### Govern and Optimize

- Automation as a Service.
- Automation Governance / Outcome Management.
- KPI Measurement.

## In the Real World

### We help a u.s. grocer deliver more value to bargain-hungry food shoppers

#### The Challenge

Of all the major segments in retail, the grocery business is one of the most competitive. With margins of only about 1%, a supermarket chain cannot reduce prices in its stores unless it can cut costs elsewhere in its operation.

A major U.S. grocery retailer faced this challenge when it asked Cognizant to assess and redesign the inefficient accounts payable (AP) and accounts receivable (AR) operations at its 3,400 stores. Management was concerned about resources being spent on manual AP/AR processes, which generated no value for store customers.

#### Our Approach

Our client recognized the need for automation, but its IT systems didn't allow for it because data originated from analog sources, including images and PDF files. To automate and optimize the stores' manual processes, we implemented intelligent process automation along with an offshore sourcing arrangement. IPA automatically

pulls information from multiple source systems and digitizes it. The solution reduced the need for manual work, improved accuracy and efficiency and cut overall costs.

#### Outcomes

To hold down food cost increases to consumers, management committed to several productivity goals, including reducing headcount by about 5% every year. Without IPA, the business likely would not have met these expectations. In addition, we helped the client achieve:

- 100% increase in the accuracy rate of data to be input into systems.
- 20% reduction in average handling time per invoice.
- 5% reduction in headcount in the first year the solution was deployed.
- 0% rate of inputting errors.

**We help  
speed  
revenue  
realization  
through  
automation**

**The Challenge**

Agents of a leading U.S. revenue cycle management (RCM) service provider were manually logging into healthcare provider portals to check patients' eligibility and benefits for upcoming appointments. Accurate confirmation streamlines claim submissions and health plan reimbursements. However, with more than 120 provider portals changing every quarter and agents expected to be familiar with each of them, the verification process was complex.

The provider's existing eligibility and benefits confirmation process involved more than 250 complex business rules. Data had to be extracted from more than 35 fields pertaining to co-pays, coinsurance, annual deductibles and remaining deductible amounts. For appointments made on short notice, these tasks had to be completed within a day. This tedious, time-consuming process was prone to errors. It also risked patients, receiving incorrect information and providers, submitting inaccurate claims that eventually would be denied.

**Our Approach**

Cognizant's healthcare team designed a robotic process automation (RPA) solution for the RCM service provider's complete eligibility and benefits verification process.

It includes 23 software bots running 22 hours a day, five days a week.

The automation process pulls patient appointment lists from healthcare provider portals across various locations, prioritizes these appointments, extracts appointment details by accessing two different applications and 14 screens, consolidates output reports and confirms patients who are eligible for benefits. The bots also validate and update eligibility and benefits details in each practice's portal.

**Outcomes**

Cognizant helped the RCM service provider automate its benefits and eligibility verification process using RPA. The provider has improved its customer service and capacity for growth by minimizing costs and saving thousands of hours annually.

- 5,000 transactions processed per day.
- 100% accuracy.
- 17,000 hours saved annually.



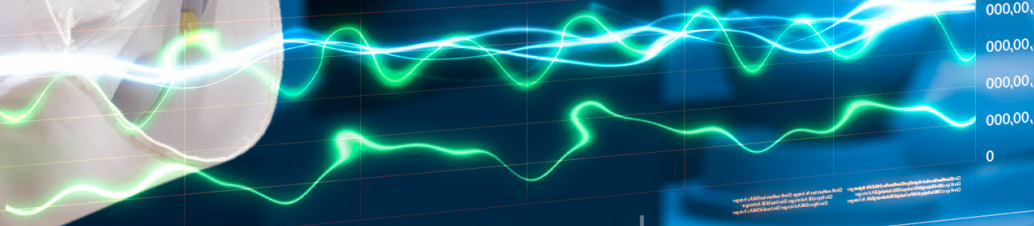
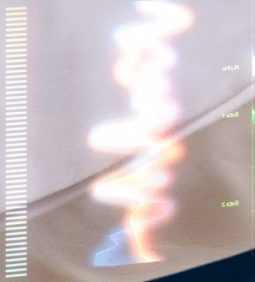
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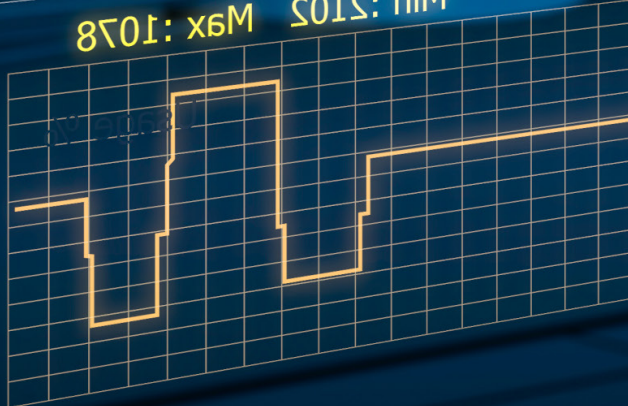
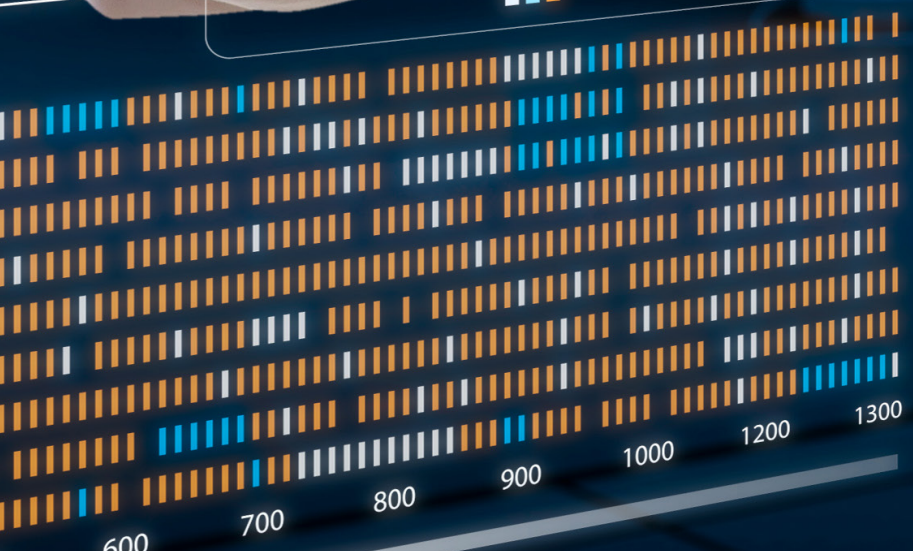
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TOTAL	87
BLOOD	94
FAT	87
MAM	94
T	87
SP	94



Min: 2105 Max: 1078



## Our Exclusive Methodologies

**Our end-to-end methodology begins with scoping and aligning your initiatives to business outcomes. We help you answer these key questions:**

- Who should be responsible for automation in the organization?
- How does automation affect our culture, people and workforce management?
- What are the change management mechanisms we need to address?
- What are the business risks—reputation, compliance, ethical hazards—associated with automation? How do we manage those risks?
- What are the capabilities we need to build to effectively embark and scale on the automation journey?
- How do we develop and articulate a business case for automation?

**We then help your organization discover and realize value using an array of best practices, tools and accelerators, including:**

- Best-in-class automation assessment framework: We focus on processes and reducing complexity, using a lean-enabled automation analysis to identify automation candidates and define clear deliverables.

- **Solution design:** Our approach addresses these critical aspects for every process: reusability, integration with other systems, human in the loop, failure recovery, notifications and alerts, configurable elements and reporting and logging. This detailed approach helps ensure that the reengineered process delivers expected results.
- **Agile implementation:** We speed the creation and deployment of automation solutions with our agile approach to building the automation backlog and implementation. Then our maintenance and management ensure continued optimal performance and benefits.
- **Development accelerators:** Your organization realizes the benefits of automation sooner with our library of ready-to-deploy design elements and reusable assets and our automated code review utility.
- **Experienced bots:** We have more than 3,000 robots deployed for a wide variety of clients and have developed more than 200 bot résumés while continually expanding that list

## Solution Design Aspects

### REUSABILITY

Identification of reusable component use

### INTEGRATION WITH OTHER SYSTEMS

Integration with any client systems or OCR/NLP that are required

### HUMAN IN THE LOOP

Delegating errors and exceptions to operations users

### REPORTING

List of reports to be sent out by the robot as part of day-to-day processing



### NOTIFICATIONS AND ALERTS

Identify alerts and notifications to be raised by the robot

### CONFIGURABLE ELEMENTS

Identify elements of the process that need to be under the control of the operations user

### FAILURE RECOVERY

Approach to read failures

### LOGGING

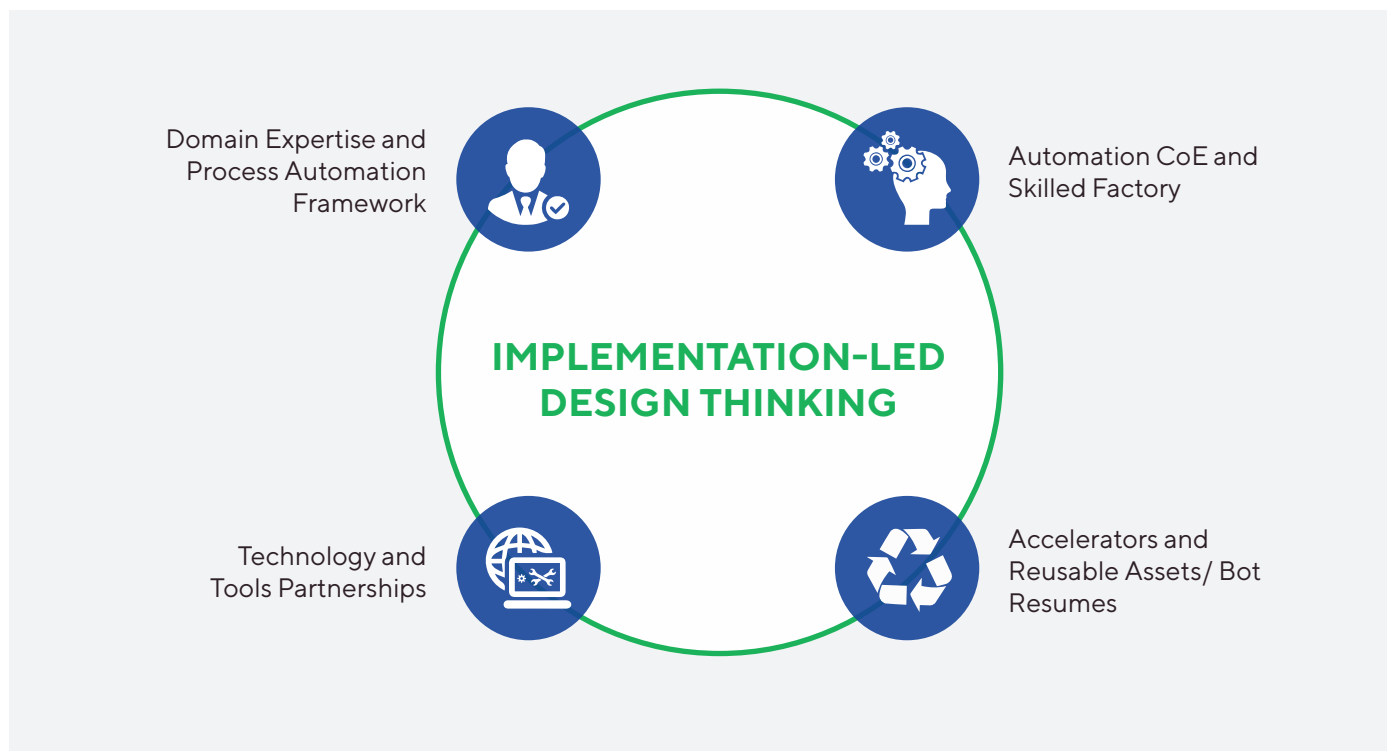
Attributes of the process that need to be logged by the robot



## The cognizant digital operations advantage

Our Intelligent Automation offering is one of our many Digital Operations solutions which enable organizations to transform operations for success in the digital economy. We're helping clients reengineer, digitize, manage and operate their most essential business processes, introducing better ways of working that improve customer experiences, heighten efficiency and lower operating costs to deliver clear outcomes and topline growth.

### What sets us apart:



## Let's get started

- Achieve new levels of intelligent automation performance throughout your enterprise with our proven methodologies, extensive robotic capabilities and deep experience. For more information about driving business outcomes at scale with intelligent automation and Cognizant Digital Operations,
- please visit [www.cognizant.com/cognizant-digital-operations/intelligent-process-automation](http://www.cognizant.com/cognizant-digital-operations/intelligent-process-automation).

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### About Cognizant

Cognizant (Nasdaq-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 195 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at [www.cognizant.com](http://www.cognizant.com) or follow us @Cognizant.

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## Patterns for Success: Lessons Learned When Adopting Enterprise DevOps

Enterprises that have successfully embraced DevOps are well on their way to accruing real benefits. For every success story, however, there are many more perceived or real DevOps failures. Here's how to make sure DevOps earns a great reputation in your organization.

### Executive Summary

While success with enterprise DevOps is never guaranteed, the promise it holds for organizational transformation has never been greater. The benefits of DevOps - a practice that integrates the activities of developers and IT operations to enable a more agile relationship - have never been more possible to achieve, including faster time to market, reduced IT costs and lower total cost of ownership. In fact, it can be argued that in today's fast-paced global markets, enterprises either need to adopt DevOps or risk succumbing to more agile competitors.

Generally speaking, the benefits that enterprise DevOps offers the business are broadly measured, using the following hard and soft metrics:

- **Accelerated product/application lifecycles and velocity.** Through automation, real-time problem identification and continuous refinement, DevOps promises to accelerate application development time, decrease maintenance costs and increase ROI.
- **Automation-driven software development lifecycles (SDLC).** Because enterprise DevOps pushes the envelope on automation, it largely replaces time-consuming manual steps, and measures key metrics associated with automation to quantify benefits over time. Metrics include completed projects, reduced project backlogs, improved cost tracking and more.
- **Reduced touchpoints and frictionless enterprise workflows.** In most organizations, multiple stakeholders are involved in enterprise IT, from applications requirements definition, to rollout and maintenance. Many business managers and functional groups participate, as well. All of this adds complexity, cost and time to development. DevOps identifies the touchpoints that exist among these silos and reduces them through pragmatic automation.
- **Enhanced engineering maturity.** By addressing cultural concerns, tools integration and processes used across the software delivery lifecycle, IT professionals become more skilled in using the latest technologies available.



This whitepaper addresses the most common reasons for DevOps failure, and advises on how to succeed with enterprise DevOps, based on our experience, perspectives and insights from our work with large organizations across the insurance, pharmaceuticals, retail and other industries.

## Common Strategic Failures

With such clear-cut benefits, why are many DevOps initiatives not making the grade? Based on our work with clients, we have identified seven common denominators of failure in organizations that failed to realize the expected DevOps benefits.

### 1 Lack of a common definition

DevOps frequently means different things to different people. Even those serving in various technology positions will have their own definition, perception and opinion of DevOps. A lot of this ties back to personal experiences, roles and organizational silos. As a result, it is common to see a significant amount of confusion around what DevOps is, or what it should do in the context of the organization.

We define “enterprise DevOps” as a form of DevOps that includes most, if not all, of the following components: Smart environments, enterprise continuous delivery, enterprise release management, feedback amplification and use of next-generation DevOps technologies (see QuickTake, page 3).

### 2 Organizational resistance

A lack of clarity and consistency around how the enterprise defines DevOps can lead to noise, chatter and ambiguity. Each of these roadblocks can lead to organizational resistance to change and a failure to successfully embrace DevOps. Some of the common excuses we hear include:

- Our applications are too complex to migrate to DevOps.
- Our applications and processes are already working pretty well; if it ain't broke, don't fix it.
- We have multiple silos within the organization, with each doing its own thing. There's no point in trying to bring these groups together.

### 3 Cultural issues

DevOps is frequently blocked by cultural issues within the organization. While it may have been defined on paper and presented to stakeholders in PowerPoint decks and spreadsheets at various town halls and meetings, DevOps can still fail to become real. Lack of leadership and commitment are frequently to blame. Without ongoing executive support and progress toward execution, DevOps becomes a non-starter before it even begins.

### 4 Technology spread

Large enterprises are often complex ecosystems. The technology spread that exists among distributed applications, legacy systems and commercial, off-the-shelf products is prevalent in organizations today. Any effort at embracing DevOps ends up becoming a short-lived Band-Aid solution to a tactical problem.

While technology spread is a fact of life within any large organization, it's also one of the key factors that makes DevOps so exciting. When a mix of mainframes, legacy software and emerging cloud-based digital systems exist side by side, enterprise DevOps offers the potential for inclusion of all technology types and platforms. Implemented correctly, it can deliver on the promises of lower cost of ownership, increased engineering maturity and reduced time to market, among others.

### 5 Divergent tools

In our more than a decade of helping organizations with enterprise DevOps - even before the term “DevOps” came into existence - we've seen an enormous collection of tools in nearly every customer landscape. Not surprisingly, many tools are practically duplicates of each other in various technical silos, with many of the toolsets doing the same things. Take, for example, the tool chain for a specific function, such as version control for managing source code, where GitHub might be used by some groups and IBM Rational ClearCase or CA Harvest SCM by others. Similarly, when base scripts for managing and compiling software are called for, different teams may well be using a mix of Ruby, shell scripts, Bash, PowerShell or similar systems. Meanwhile, other toolsets are used to store binary code libraries in repositories and to measure the quality of the code that's written.

As new toolsets roll out and gain their own followers, each team develops a vested interest in them. Any effort toward standardization and consolidation of tools quickly becomes an enterprise nightmare, with significant overlap in functionality and wasteful spending on software, people and training. A more pragmatic approach is to work in a structured, disciplined and non-confrontational way, where the problem is first identified and then agreement is reached on a plan to move toward a smaller, universal toolset that is universally adopted in, say, two years.

## 6 Architectural differences

Even within the same technology stack, it is not uncommon to see architectural variations. Unfortunately, each architectural variation calls for its own specific implementation to make DevOps successful. This adds complexity, time, effort and cost to making DevOps real and meaningful across the architectural variants.

### **Quick Take**

#### Defining DevOps: Five Key Pieces for Getting from Here to There

To succeed, an enterprise DevOps initiative should incorporate the following five characteristics.

- **Smart environment:** In conventional approaches to software development, a three-step process is followed for software implementation. The business defines its requirements, IT performs the development, testing and support, and operations staffs the data center and watches for problems that may arise.

With DevOps, the roles are very different. Yes, business managers still work with technology teams to define requirements; but now, IT and operations work together to perform development and testing, using common tools that automate these functions as much as possible.

- **Enterprise continuous delivery:** Once a piece of software is ready for testing, successful DevOps organizations deploy the software in a smart testing environment, using virtual machines rather than physical servers. The virtual machines are frequently provisioned in an on-demand, cloud environment, with automated development and testing.

- **Enterprise release management:** This is where true alignment exists among different technology teams. Characteristics include a common, agreed-upon end date for each release, with detailed plans in place to detect early trouble signs and to seamlessly process release rollbacks when needed.
- **Feedback amplification:** Analytics are required to gain insights into all the event streams, log data, metadata and build histories generated by modern digital systems. Being able to channel this data into a single source and draw real-time insights from the patterns that emerge is a key tenant of success.
- **Next-gen DevOps:** While DevOps may not be new, the ways in which successful organizations develop, test and deploy modern applications are. Fortunately, early adopters of rapid-release technologies, such as micro-services, containerization, the cloud and platform as a service, are well-served by enterprise DevOps.

Finally, “technical debt” can make any effort to embrace DevOps like walking on thin ice. By technical debt, we mean poor quality software that may have been rolled out to the organization prematurely some years back but was tested to be functionally adequate at the time. Although architectural and engineering flaws may have been identified, the software was cleared for release with the intent to clean it up later. Unfortunately, the clean-up never happens, and the debt balloons over time.

In the wake of market demands and business pressures, many internal developers strive to get their code pushed into production quickly using the manual processes they know best. Human nature is such that they would continue to slog it out manually rather than change their ways, embrace DevOps and begin automating different process elements.

### Predictors of Enterprise-Scale Success

Organizations that succeed with enterprise DevOps share some common practices. Think of these as predictors of success that form the building blocks of enterprise DevOps. If the underlying foundation is missing or weak, organizations will fail in their adoption journey.

Here are the building blocks that we’ve found will ensure success with enterprise DevOps:

- **A big picture view.** Both IT and business managers have a firm grasp of their company and the markets it serves. Consensus exists among team members as to where they are, where they are going and how fast they must move to get there.
- **A detailed plan.** Unlike many organizations that think of enterprise DevOps as a magic switch – flip it on, and the benefits of DevOps begin to flow in – successful programs are based on agreed-upon plans. They have a medium- to long-term commitment from top management, and the people and resources are in place to make the journey work for everyone.
- **A realistic budget.** No matter how organizations look at their budgets and spending patterns, enterprise DevOps needs seed funding to be successful. Making an initial budget available is one of the best things organizations can do to ensure long-term success.

- **Full executive support.** Enterprise DevOps does not work without executive support and sponsorship. Successful DevOps organizations first secure executive support by defining, budgeting for and staffing key roles.
- **Bottom-up stakeholder buy-in.** As much as executive support is needed, it’s almost never a good idea to push down a mandate from above. Successful programs lay the groundwork by building bottom-up stakeholder buy-in at all levels.

### Success Patterns to Follow

No two organizations that succeed with enterprise DevOps follow the same path. However, there are six specific patterns, or characteristics, that we’ve found leaders can customize to their unique situations. Just as objects in the everyday world must follow the laws of physics, organizations that stray too far from any of the following success patterns cannot expect to see great results.

1. **Define a reference architecture.** Successful organizations begin by defining their end-state target operating model (TOM), using a reference architecture. There are numerous examples of reference architectures available, but key pieces include development tools, testing suites and code repositories.
2. **Create implementation blueprints.** Nothing breeds success like success, so defining two or more pilot projects that can be implemented quickly (ideally, no more than six months from idea stage to launch) is one of the best ways to embrace the DevOps TOM. Good pilot candidates are visible and relevant to senior management and bridge the gaps between the current state and the desired state. Anything less is more of a proof of concept than an actual project deliverable.
3. **Use platform-driven automation.** DevOps success hinges on automation. Platforms should readily expose automated features to applications and developers in a standardized and incrementally sophisticated manner. Leaders add progressively more features and functionality onto the platform over time as more applications are onboarded.
4. **Achieve cultural alignment through adoption.** Having a good platform in place is not enough. Leaders recognize that enterprise DevOps fundamentally changes the cultural fabric of the organization. As such, simply telling people to change their ways of working is tantamount to failure. Successful organi-

zations introduce automation first on one platform, convince more people to use the platform for their applications, and reward behavior and culture change over time.

The best programs are based on a shared management vision, in which three tracks are identified and acted upon from the beginning: Culture, technology and adoption. Some ways to speed adoption include shared group meetings, informal brown bag lunches and the introduction of tools to collaborate better.

**5. Drive enterprise DevOps through dedicated, specialist roles.** Technology is important, but it's the assignment of people to clearly defined and established positions that separates winners from losers. At a minimum, we recommend a DevOps champion, typically an executive sponsor at the vice-president level or above; a DevOps evangelist, usually one per business unit; a DevOps platform architect (usually one for each application area); and senior DevOps platform engineers, as needed. Finally, every program needs a DevOps program delivery owner skilled in leading complex projects.

If individuals within your organization are already playing at least some of these roles on an informal basis, be sure to set up these specialist roles for success in three ways: Clear their desks of all other organization responsibilities, provide them with adequate training and development resources, and ensure they have a clear organizational charter. Remember, enterprise DevOps must be inclusive. Because teams are at different levels of technical capability, successful programs are designed to help all colleagues improve.

**6. Objectively track and measure.** As mentioned earlier, making the benefits of DevOps unambiguously transparent to all will go a long way toward cementing the program's place in the organization. To paraphrase management guru Peter Drucker, "You can't manage what you can't measure."

When communicating benefits, it's not enough to simply publish reports. After all, metrics can be seen as "death by spreadsheet" in many organizations. By the time the information makes its way to decision makers, it's often out of date. Successful programs automatically extract key data points through DevOps analytics, and use dashboards and other straightforward tools to deliver real-time insights.

## Looking Ahead

To date, our team at Cognizant has helped more than three dozen customers succeed with enterprise DevOps. These customers are large enterprises, with all the associated complexities and challenges.

Based on our experience, we conclude with these final recommendations for every organization embarking on an enterprise DevOps journey:

- Address the foundations first.
- Take a multi-pronged approach, creating separate tracks to drive DevOps strategy, build the platform and encourage adoption.
- Create and define specialized, dedicated enterprise DevOps roles.
- Focus on incremental enhancements rather than "big-bang" initiatives that take too long and pose a greater possibility for failure.
- Use early adopters as internal champions.
- Actively provide coaching, evangelization and support.
- Transparently measure and share benefits to all.

Remember, none of this will happen overnight or without the full and ongoing support of management. Yet, with careful planning and commitment, top organizations have already proved that success with enterprise DevOps is not only possible, but transformative to business, as well.

## About the Author

*Kapil Apshankar leads Cognizant's Technology Product Services Group, focusing on DevOps, Hadoop product development and next-generation product engineering. He brings a rich and diverse Silicon Valley perspective from spending a decade-plus exploring various technologies.*

*In 2005, Kapil developed a sophisticated methodology that empowers companies to harness the power of multifidelity rapid prototyping, which fundamentally changes the way they build software products. In 2007, he helped build the first-of-its-kind enterprise experimental learning platform. In 2010, Kapil incubated one of the largest distributed Scrum development teams in India. He is a regular speaker at technical events, including O'Reilly Conferences and The Innovation Enterprise Summits. He can be reached at [Kapil.Apshankar@cognizant.com](mailto:Kapil.Apshankar@cognizant.com).*

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## About Cognizant

Cognizant (NASDAQ: CTSH) is a leading provider of information technology, consulting, and business process services, dedicated to helping the world's leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, and a global, collaborative workforce that embodies the future of work. With over 100 development and delivery centers worldwide and approximately 255,800 employees as of September 30, 2016, Cognizant is a member of the NASDAQ-100, the S&P 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world. Visit us online at [www.cognizant.com](http://www.cognizant.com) or follow us on Twitter: Cognizant.



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# Accelerate Time to Market for New Digital Products and Services



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## Speed Is the New Success

There are many differences between traditional and digital business models, but perhaps the most important and far-reaching is speed. And the most important manifestation of speed is the rate of innovation. Digital businesses need to be first to market with new products and services. In the digital world, many new products and services are driven by digital development, and the need to focus on fast but effective app development is increasing. According to Gartner, more than a quarter of enterprises globally have not built, customized or virtualized any mobile apps in the past 12 months.<sup>1</sup> “This will place an increasing amount of pressure on IT to develop a larger variety of mobile apps in shorter time frames,” says Gartner research director Adrian Leow. And this pressure will extend well beyond just mobile apps.

As new digital products and services such as financial planning, personalization, and even healthcare services are released with greater frequency, markets become hypercompetitive. Some companies are putting substantial marketing expenditures behind these new digital products and services, making them a critical means of differentiation. For example, as highlighted in the omnipresent Progressive commercials, the insurer’s digital application that allows customers to “name their price” has become the company’s primary point of differentiation. In the mortgage market, Quicken Loans has used its digital services for mortgages to become the largest home lender in the United States in just a few short years. New digital services are changing market share in real time.

Speed is a primary differentiator between digital predators and digital prey. For that reason, companies must completely rethink their internal processes for designing, developing and deploying new digital products and services with a primary focus on how to cut design cycle time and reduce time to market.

## Rethinking the Process for Developing Digital Products and Services — Adopting the MVP Approach

Organizations are facing an imperative: It is absolutely necessary to move away from slower legacy approaches to digital product development. There are a number of high-level strategies that any organization can take to enable faster delivery of digital products and services.

One proven strategy for dramatically improving speed to market is implementing the Minimum Viable Product (MVP) approach to design and delivery. Eric Ries describes this in detail in his book *The Lean Startup*. The MVP approach focuses on finding a useful but narrower functional design point that allows a company to “scope down” the features and speed up the design process, thereby bringing the offering to market much faster. Typically, most businesses try to include as many features as

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<sup>1</sup> “Gartner Survey Reveals the Number of Enterprise Mobile Apps Is Not Accelerating,” Gartner, June 1, 2017

possible and deliver a full-featured version 1.0 of their product. MVP takes the opposite approach, detailing what the minimum usable design is to reduce the design and development time frame as much as possible. Additional features are added in frequent, future iterations.

This may raise concerns and cause fear that the product doesn't "do enough," but today's digital customers already accept the "deploy and update" process and rely on frequent updates. Companies applying the MVP approach include highly successful businesses. For example, Dropbox started with a video only and showed the basic functionality to persuade customers to sign on. Features such as robust security and file integrity were added years after launch. Another example is Zappos, which started as a website showing pictures of shoes from local stores to gauge interest and shopping patterns. From there, it determined the MVP necessary to launch the online retailer.

### Digital Engineering – 3 Pillars Drive the New Process

Perhaps the most important process change to enable the MVP approach is the adoption of digital engineering concepts and processes. Digital engineering changes the process for developing new digital services by driving the design process with customer research and using the direct input from customers to inform the design and move it to the programming team for actual development. Digital engineering is based on three fundamentals:

#### 1. Correctly understand the customer/user requirements

While the coders of virtually every application built since 1965 will claim that they have incorporated user/customer input, digital engineering takes this to a much higher level with more rigorous hard data input and quantifiable measurements. Among the most important new approaches is the use of social science data and observations to infuse the design with the insight that comes only from reliable data collection methods. In many cases, this social science data may be gathered from outside sources or observing customer behaviors when using similar products. Further, the team should have regular design thinking sessions to incorporate new customer/user feedback and identify new

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sources of hard data that informs the design. A primary difference from legacy approaches is that key input and design goals come from customer input and observation, not the developers or product manager alone. The result is a customer-centric design point based on documented information.

During this phase of the process, the design and development team should evaluate any similar products or services that already exist or competitive offerings that are currently in the market. This helps ensure that the MVP design point is an improvement over current solutions and not behind competitive offerings. As part of this process, attention should be given to shortcomings in competitive offerings. It is important to remember that the MVP approach is useful for both upgrading an existing product or service as well as entirely new offerings.

## **2. Use direct customer input to create the initial MVP design spec and future versions**

The MVP is always designed with customer engagement. This may be in the form of customers looking at screens, or via questionnaires and interaction. In addition to these well-known methods, new approaches such as “shadowing” customers to see how they use and interact with a potential design or logic flow is very useful for direct feedback. For web applications, some organizations will use lasers to track where the customer’s eyes move as they scan the page. And a relatively new method of getting input is the use of storyboards and mockups. The combination of these input methods can also be used to prioritize the most important features or usage patterns that will drive the MVP. The customer becomes the ultimate arbiter of the design.

This focus on customer engagement, both directly and through social observation and social science, ensures that the design is driven by “what customers want,” not “what development can do.” Further, the clarity and prioritization that comes from customer-driven input can be used to eliminate features or capabilities and nail down the MVP.

## **3. Scale the MVP approach with best-in-class DevOps tools and processes**

Once the MVP has been defined using the first two pillars of digital engineering, it is time to scale the MVP into an actual product or services using best-in-class development tools and processes. This finished product may be a “net new” product or an upgrade of an existing one. Agile development processes and a DevOps strategy are common methods of scaling the MVP into finished product. In addition, cloud development using platforms is often an option for many businesses. Legacy development approaches are just not conducive to fast and agile delivery of new digital products and services.

And scaling the MVP includes not only the initial product or service release but the delivery of future versions as well. The MVP approach includes support for iterative development, enabled by all the tools found in modern DevOps and Agile methodologies. As part of the iterative design model, it’s important to manage and direct developers with an emphasis on the idea that there isn’t a specific finish line and that iterations will be frequent and require fast

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completion. This is a key element in the concept of scaling the MVP over time and through multiple iterations.

In addition, ensuring the development environment has built-in security, compliance and governance capabilities enhances speed. This eliminates the lag that occurs when the basic design is complete and then weeks (or months) are spent retrofitting the security and compliance functionality necessary to release the product or service into the wild.

## Cognizant Delivers Best-in-Class MVP Support

Cognizant is well versed in utilizing the MVP approach with substantial expertise and many successful completed projects. The company is a skilled practitioner of the digital engineering methodology that results in successful MVP projects. It provides technologies and services that enable accelerated time to market, and there are many proof points of how the Cognizant approach provides real-world benefits.

In one example, a large conglomerate wanted better delivery with faster “time to customer” for its agri- business. Cognizant worked with the company to identify an MVP that would gather data on key customer behaviors and integrate information from its SAP environment to identify customer requirements. This was used to define an MVP that became a digital service that now delivers deliver greater visibility into its supply chain and improved speed of customer delivery. Faster delivery of food items to 5,000-plus stores was achieved along with a 15% efficiency gain.

## Key Takeaways

Delivering innovation is essential to success in today’s digitally driven business environment. And many of the innovative new products and services are digital in nature. The difference maker will be the speed at which these new products and services can be released. The fastest organizations will win.

The challenge facing every organization is how to start on the path to an MVP-based approach to the design of digital products and services. CIOs and other IT leaders are well positioned to bring this concept into their organizations. The most immediate way to accomplish this is to identify short-term projects where moving from legacy approaches to the MVP design method, supported by digital engineering principles, can deliver the solution in a tight time frame.

### ABOUT COGNIZANT’S DIGITAL SYSTEMS & TECHNOLOGY

Cognizant Digital Systems & Technology helps clients create, evolve and transform applications, platforms and infrastructure to meet the needs of the modern enterprise—unlocking value in legacy technology environments, adapting to the speed of change and ensuring the integrity of the IT core. To learn more, contact us at [simplify@cognizant.com](mailto:simplify@cognizant.com). You can also visit us at [www.cognizant.com/cognizant-digital-systems-technology](http://www.cognizant.com/cognizant-digital-systems-technology), or email us at [Inquiry@cognizant.com](mailto:Inquiry@cognizant.com).

### ABOUT COGNIZANT

Cognizant (NASDAQ-100: CTSH) is one of the world’s leading professional services companies, transforming clients’ business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 205 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at [www.cognizant.com](http://www.cognizant.com) or follow us @Cognizant.

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# Cognizant Cyber Threat Defense

Managed security that is flexible, scalable and adaptable to today's digital demands.

## Managed security for today's threats

Modern organizations deploy tens or even hundreds of thousands of devices, ranging from desktops, laptops, tablets and smartphones to servers, firewalls, routers and switches. The number and variety of these devices, and the software that runs on them, will only grow with the addition of more mobile devices and of sensors on the Internet of Things.

Keeping users, data, endpoints and applications secure is a never-ending battle. A typical enterprise uses 70+ security point solutions in an effort to keep pace. This creates enormous security infrastructures that are costly and difficult to manage, much less adapt to changing requirements or to popular cloud platforms. Many of the point solutions can't even communicate with each other or manage hundreds of gigabytes of daily security log data.

In addition, most companies lack the expertise and staff to analyze all that data, find the most critical events and effectively respond to them. As a result, they are becoming more vulnerable even as they spend more on security.

As the challenges escalate, enterprises are turning to managed security service providers (MSSPs)

for the specialized tools and skills required to cost-effectively fight the rising range, volume and severity of threats. These MSSPs must do more, however, than merely transmit hundreds of thousands of alerts that overworked internal staffs struggle to evaluate.

A modern MSSP must provide an integrated, contextual view of threat data to find and prioritize attacks. It must provide automated analysis and correlation to find even targeted or "quiet" attacks spread over time or across devices. It must provide instant and clear understanding of not just the technical, but the business impact of various threats so the organization can focus on the most urgent. And it must provide detailed workflows describing how to find and fight those threats.

## Cognizant cyber threat defense

Cognizant Cyber Threat Defense is a scalable, next-generation managed security service that goes beyond providing masses of log reports and alerts to actionable, business-oriented workflows that guide you through mitigating the most critical threats..

It taps a wide range of sources for the latest threat intelligence, such as lists of suspect IP addresses and URLs to lists of malware hashes and indicators of compromise. We combine that with data from your devices, endpoints and applications and correlate it using artificial intelligence to fight even low-profile attacks. For example, if the system sees suspicious activity from an IP address it can determine if that address has been flagged as suspect by a third-party security service. If so, it can then trigger automatic reconfiguration of your routers or firewalls to block that address.

These capabilities are backed by a global network of security operation centers, best-in-class cloud providers and dedicated teams empowered to help meet your most pressing security challenges. Our years of consulting helps us choose the right security monitoring, orchestration, automation and integrated threat intelligence platforms for you, and to customize our solution to assure a faster return on investment.

### Key features

- Our machine learning analysis eliminates much of the drudgery of assessing threats by adding context such as associating IP addresses with users and assets, tracking changes of configurations as well as histories of vulnerabilities and patches on assets. It can also associate geolocation log activity with user accounts and timelines to determine if an access attempt from an unusual location is suspicious or reflects the fact a legitimate user is traveling.
- Gathering data of from thousands of devices, endpoints and applications throughout your network, IBM QRadar Security Information and Event Management includes out-of-the-box analytics, correlation rules and closed-loop feedback that continuously improves threat detection and speeds the investigation process by 50 percent.
- Anomali's comprehensive threat detection, investigation and response platform collects intelligence from a wide range of premium feeds, applies machine learning to reduce false positives, normalizes disparate sources and enriches the data with additional context to allow your analysts to make better decisions more quickly.
- Our improved security information model pre-defines and models threat cases, minimizing the need for iterative tuning with "out of the box" threat detection. Rather than assessing severity only by the type of event, we map business value to risk ratings considering factors such as the affected users and services and the criticality of the affected assets.
- ServiceNow's Security Operations platform provides a security orchestration, automation, and response engine that helps quickly prioritize and respond to threats based on their business impact, and prevent attacks by identifying, prioritizing and remediating misconfigured software.
- Prebuilt connectors to your IT infrastructure speed orchestration without the need for custom scripts or configurations. This enables remote changes to configuration policies, approval workflows and audit histories and easy sharing of data among platforms including access management, authentication, networking, hosts, firewalls and intrusion prevention systems.

## Benefits of cognizant cyber threat defense

- Reduced time to identify and mitigate threats.
  - Industry-leading analysis of user behavior detects suspicious activity such as access attempts at unusual times or from unusual devices, or access to a spurious, temporary domain name that exists only to send malware to a downstream system or commands to malware running on it.
  - Frees your security experts from the drudgery of monitoring devices and alerts to proactively search for malware or attackers, improve automated security processes and better find or prioritize possible attacks.
  - Typically requires less cost and effort than maintaining your own security operations center.
  - Instant, up-to-date visibility into your security posture through our Cyber Threat Defense portal.
  - Faster, more cost effective and assured security compliance through improved audits, guidance on optimal device configuration and expert help from Cognizant security experts.
  - Reduces the need to hire and manage in-house security staff.
  - Fast, Flexible and thorough onboarding with dedicated advisory time
- Global security operation centers assure timely response to threats at any hour and in any region.
  - Use of first-tier cloud platforms provides scalability to monitor increasing numbers of users, applications or devices.
  - Expert guidance from experienced security experts improves everything from tool selection to creation of automated remediation workflows.

## Where Legacy Enterprise Security Falls Short

- Lack of incident intelligence and business context makes it hard to prioritize threats.
- Enterprises get volumes of log information but few business-oriented insights or remediation plans.
- Disparate solutions are expensive to maintain and difficult to manage.
- Slow to scale and adapt to changing needs.
- Not suited to cloud models.

Contact us at [cognizantsecurity@cognizant.com](mailto:cognizantsecurity@cognizant.com) learn more about how Cognizant Cyber Threat Defense can provide more flexible, scalable and adaptable security starting with a detailed evaluation of your security requirements.



## Contact your Cognizant representative today

Cognizant Security helps you achieve better business outcomes by securing your digital transformation. We provide the security capabilities you need to address ever-changing threats, maintain compliance and reduce the unsustainable burden of managing security infrastructure.

To learn more visit our website, [www.cognizant.com/security](http://www.cognizant.com/security) or feel free to contact us directly at [cognizantsecurity@cognizant.com](mailto:cognizantsecurity@cognizant.com)

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## About Cognizant Digital Systems & Technology

Cognizant Digital Systems & Technology works with clients to simplify, modernize and secure IT infrastructure and applications, unlocking the power trapped in their technology environments. We help clients create and evolve systems that meet the needs of the modern enterprise by delivering industry-leading standards of performance, cost savings and flexibility. To learn more, contact us at [simplify@cognizant.com](mailto:simplify@cognizant.com) or visit [www.cognizant.com/cognizant-digital-systems-technology](http://www.cognizant.com/cognizant-digital-systems-technology).

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