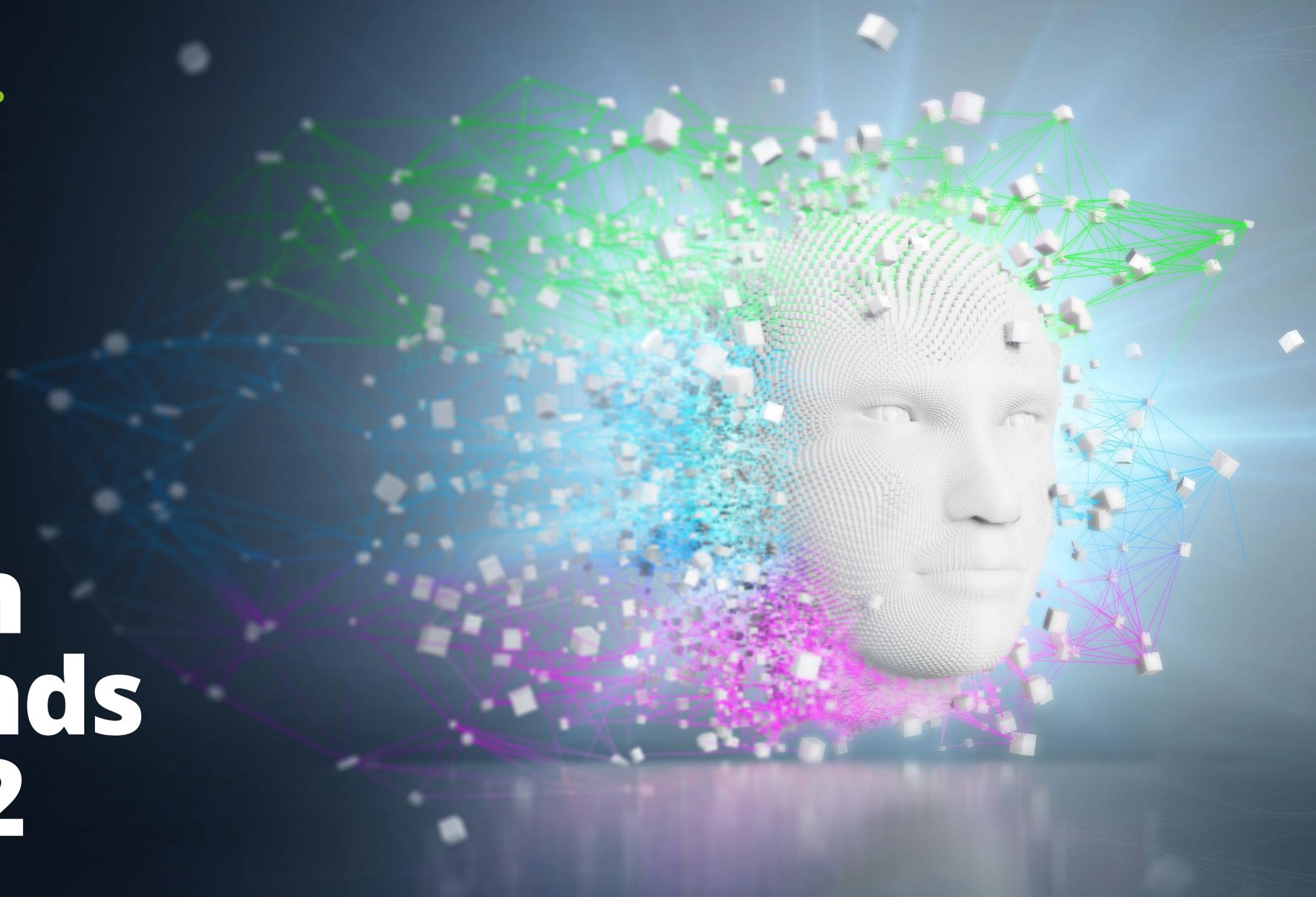
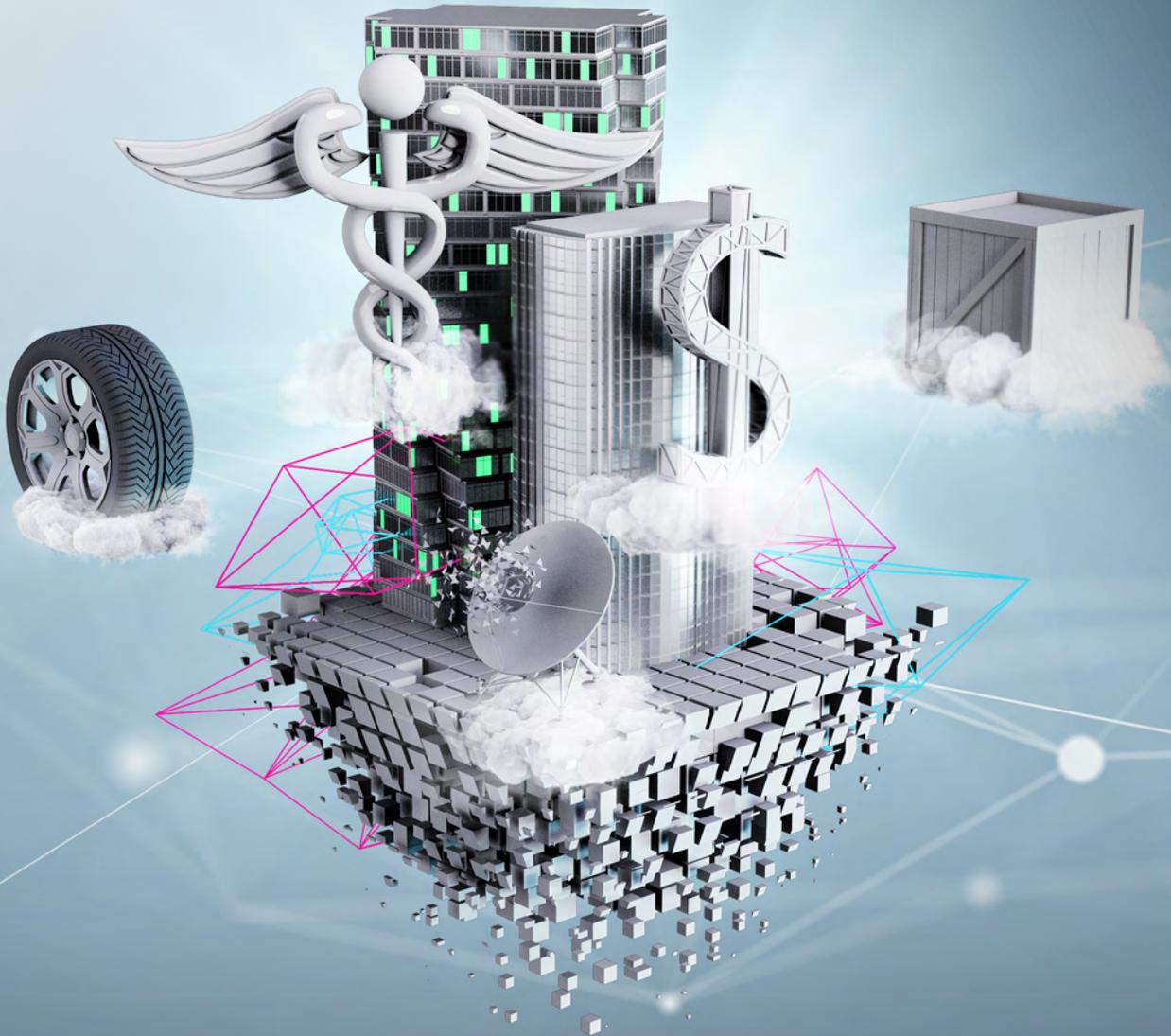


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Tech Trends 2022





Cloud goes vertical

CLIMB THE
STACK

DOUBLE DOWN ON
DIFFERENTIATION

BUILD THE CAPACITY
TO CHANGE



Cloud vendors are automating and abstracting ever-higher order business processes to create industry-optimized platforms.

By cloud-sourcing commodity industry processes, CIOs can refocus talent and budget on the systems that create competitive advantage.

Cloud-based capabilities can help organizations create the capacity to think bigger by acting smaller. Less custom code means more agility.

TREND 2

Cloud goes vertical

Industry-specific cloud solutions can enable organizations to automate manual tasks and shift their focus to competitive differentiation

As the global economy moves from a pandemic footing to a more future-focused endemic one, many organizations are looking for opportunities to become more nimble and efficient by offloading business processes to the cloud.¹

In response, cloud giants, software vendors, and system integrators are developing an array of cloud-based solutions, accelerators, and APIs that are preconfigured to support common use cases within industry verticals.² These solutions are designed specifically for easy adoption, and can be built upon to create digital differentiation.

Whatever mix of *à la carte* applications, tools, or services users adopt from these offerings, cloud becomes the fabric stitching them together into powerful business process solutions. For example, a global automobile manufacturer has partnered with cloud vendors to develop cloud-based connected car application development services for the transportation industry. The platform features industry-specific solutions along with IoT, machine learning, analytics, and compute services that manufacturers can leverage to develop connectivity layers for their vehicles.³

The health care industry initially deployed cloud processes for managing back-office data.

Regulatory compliance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) drove the next phase of this sector's cloud journey as health care organizations began managing patient data in the cloud. Today, pioneering health care providers are exploring ways to use cloud-based HIPAA models to improve medical treatments.⁴

Over the next 18 to 24 months, we expect to see a growing number of organizations across market sectors begin exploring ways that industry clouds can help them meet unique vertical needs. Indeed, based on Deloitte analysis, we project that the value

of the industry cloud market could reach US\$640 billion within the next five years.⁵

Clearly, the *Cloud goes vertical* trend is gaining momentum, so the time to begin exploring its possibilities for your organization is now. You can start by performing an assessment of your business process ecosystem to determine which processes you would consider cloud-sourcing from external vendors, and the pros and cons of doing so.

As a critical part of this assessment, try to gauge how well current processes support your short- and long-term business strategies, and where there is room for improvement. Moreover, keep in mind that the rapidly growing menu of cloud-based capabilities could spark new business models and out-of-the-box possibilities.

Finally, the industry cloud trend presents a long-overdue opportunity to restructure IT.

As companies begin outsourcing IT functions and business processes that provide no competitive advantage, they can redirect their efforts and investments to “differentiating” systems and services that do, while simultaneously creating a lasting capacity to change.

This assessment doesn’t need to be some monolithic, two-year project. Indeed, it can be done in bite-sized increments that add efficiency and effectiveness to most processes along the way. At the same time, you can begin refocusing talent and resources toward the differentiated processes that deliver competitive advantage.

From infrastructure to industry verticals

The business and technology needs currently driving the *Cloud goes vertical* trend are not new. Starting in the 2000s, organizations with

similar compliance, business process, or data management needs began adopting cloud-based software. At roughly the same time, CIOs began “lifting and shifting” some on-premises systems to public clouds in order to lower costs and gain efficiencies.

Today, the twin approaches of sharing software that meets common needs and letting someone else run your infrastructure continue to inform the *Cloud goes vertical* trend. What’s new is that we’ve moved from procuring generic functions and libraries to the digitization and availability of actual industry-specific business processes. Moreover, organizations increasingly expect cloud vendors to create “common core” solutions that address shared needs across industries and ecosystems. Hence, cloud and software vendors now offer an expansive menu of industry-specific, modular business processes available through APIs that can be accessed at the push of a button. For example,

using APIs, engineers and system architects can connect targeted smart factory systems together in a shared cloud network. Surgical capabilities like these represent a quantum leap from FedRAMP-esque, compliance-based offerings just a few years ago.

Against this background, we see this trend unfolding in the following dimensions:

Hyperscalers climb the stack

The “big three” cloud services providers—Amazon Web Services (AWS), Google Cloud Platform, and Microsoft Azure—offer cloud-based industry enclaves that automate business processes that are unique to sectors like health care, manufacturing, automotive, retail, and media, among others.

They began by creating infrastructure-as-a-service (IaaS) capabilities, which eventually

elevated to platforms-as-a-service (PaaS). But they haven’t stopped there. Hyperscalers have continued to climb the technology stack, methodically automating ever-higher order processes to create industry-optimized platforms that are, in some cases, more functionally robust and efficient than the on-premises solutions businesses are currently running. For example, some in the hospitality industry now utilize cloud-based reservations and customer management systems. Likewise, the manufacturing sector takes advantage of cloud-sourced predictive maintenance solutions.

Organizations will find much more than hyperscaler-developed products and services in industry clouds. Indeed, there is a growing ecosystem of sector-specific business capabilities from established vendors such as MuleSoft, Oracle, Salesforce, SAP, ServiceNow as well as startup and open-source projects.⁶

Focus on differentiation

Chances are you have some home-grown code that you should hang on to. You have invested time and budget developing these capabilities that—thanks to your good planning and execution—deliver competitive advantage. Think of them as keys for differentiating your organization in the market. Say you are a retailer and you’ve spent considerable time customizing your in-store inventory management engine. The C-suite (and the market) recognize your inventory capability as a best-in-class superpower. Just because your cloud vendor might offer an inventory API doesn’t mean you should automatically use it. You own the customized code and it contributes heavily to competitive differentiation. Why not keep it? You can certainly run it in the cloud, but the important thing is that it’s your IP, and it meets your unique needs in ways that off-the-shelf offerings cannot.

It's important to assess your options before you act. The spectrum of vertical-focused solutions available today is more sophisticated and granular than it was even a couple of years ago. Think about your existing ability to execute a process. If your current capability is better than what's available off the shelf, then keep your own logic. But if you are competing against digital natives and your process—and the capabilities that support it—are no longer that special, consider using an industry API.

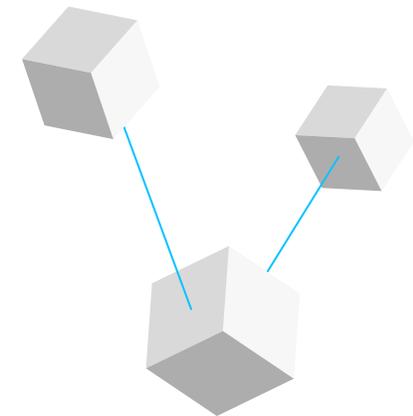
For many technology and business leaders, participating in the *Cloud goes vertical* trend will require a reckoning of sorts. Together, leaders must determine where the company wins in the marketplace, and which technologies make those wins possible. If, for example, you win through nontraditional customer service, then invest heavily in those in-house analytic capabilities; these capabilities deliver competitive differentiation and enable new innovation and revenue generating

opportunities. Guard them jealously. By contrast, everything that doesn't separate you in the market becomes commodities and can be provisioned as business services from cloud or software providers.

As you explore the opportunities that the *Cloud goes vertical* trend may offer, consider taking the following steps, some of which may be long overdue:

1. Business and IT leaders should work together to determine where the company wins today and in the future. For this effort to succeed, the business must understand technology more deeply. Likewise, IT must understand business strategy and the critical role that technology plays in advancing it. Only then can both teams identify the technologies that are critical to achieving wins.

2. Create an inventory of business processes and the cloud-based offerings that support them.
3. Identify which differentiating processes and enabling technologies to keep in-house. Likewise, identify areas in your business that could benefit from the emerging suite of technology offerings enabled by the cloud.
4. Work with cloud service providers, software vendors, and integrators to plan the next phase of your cloud journey.



Modern engineering

Even as “buy” evolves into “assemble,” there is a need for a different kind of “build.” We’re not talking about armies of developers working on multiyear projects to build behemoth custom systems. Rather, think of modern software engineering with small teams working with cloud services, platforms, and tools to integrate and deploy quickly.

A big part of this new equation is full stack teams working closely together on a set of well-defined outcomes. Leading organizations embrace “pods” or “two pizza-box teams” in which cloud engineers, UX designers, data scientists, quality assurance, and product managers blur the lines between disciplines as they work together. Team members grow and learn as they lean in on whatever the current sprint requires. Importantly, the teams are collectively focused on solving

business problems and shaping the road map of whatever they are working on. This represents a welcome change from simply cranking through solution requirements removed from the “why” and the “so what”.

The other key is empowerment. Modern engineers expect autonomy, from a purpose lens (having the choice to work on something they believe in); to a tools lens (choosing what gear, platforms, open source libraries they use to practice their craft); to a personal lens (dress code, hours, remote work arrangement).

When technology leaders from traditional organizations visit high-tech startups, they often take away the wrong lesson. The reason engineering teams at digital native companies often thrive is not because of foosball tables, stocked fridges, or silly perks. It’s because these young companies appreciate engineering as a core creative

discipline. Moreover, they respect engineers and give them the authority they need to succeed. Of course guardrails and guidelines are still necessary, especially in areas of security, compliance, and legal IP protection. But they are deployed within the larger context of elevating modern engineering as a key part of the organization’s strategy and future culture.

Build the capacity for change

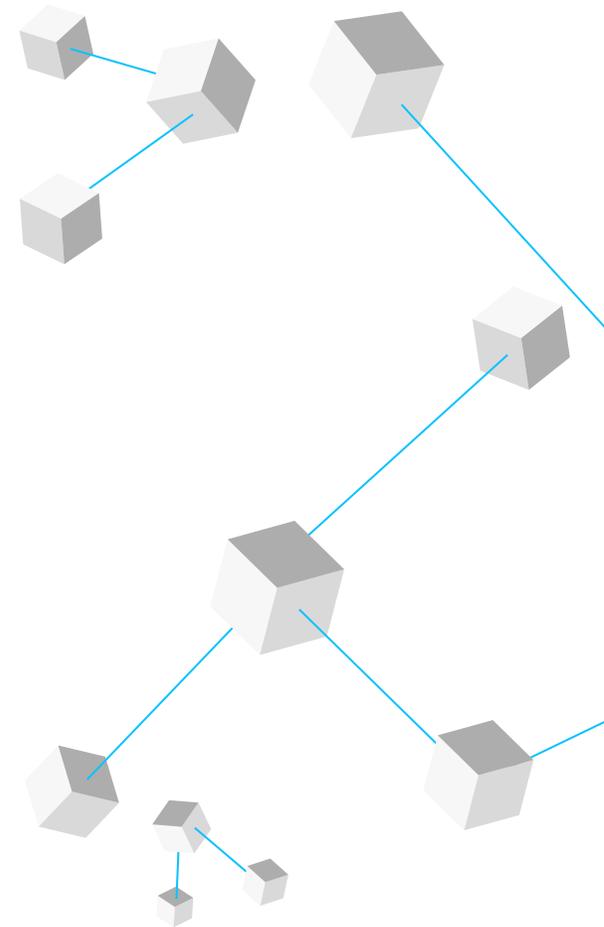
In a time of disruption and rapid-fire innovation, access to best-in-class solutions or even experimental tools gives organizations the software options they need to connect all the dots in their multifaceted digital transformation strategies. This access hinges, however, on a capacity to change.

Consider this: Clouds tailored to the needs of specific industry verticals will evolve continuously as innovative solutions and services emerge. To maintain their competitive differentiation, organizations will need to embrace disruption, and stay on top of the latest industry cloud offerings. In a climate of rapid-fire change, the future is always approaching fast. Cloud technology can help organizations create not only the capacity to change, but the agility to do so continuously. The fewer systems and processes you have

in-house today, the fewer you will have to manage, upgrade, and refresh tomorrow. Most companies are already in the cloud to some degree. If you are, think of the industry cloud trend as the next leg of your cloud journey, one that riffs on the cloud's original promise of sharing resources to solve problems affordably and at scale.

The way forward

The good news is that fully embracing the *Cloud goes vertical* trend doesn't require some big bang effort. Indeed, it can be done in small, thoughtful steps that help you side-step complicated legacy app renewals or disruptive core modernization initiatives. And with each step, your systems become more efficient and effective.



MY TAKE

Marijan Nedic

Vice president, head of
IT business solutions, SAP



I believe what separates you from your competitors is not the majority of your operations; it's the 5-to-10% of your operations that are unique.

The emergence of industry clouds—packaged solutions of common applications and configurations used across a given vertical—is helping businesses spend less time setting up the table-stakes functionality necessary for running their businesses and more time on the impactful areas that set them apart. At SAP, our goal is to create industry clouds that enable our clients to meet most needs out of the box, plug easily into partner solutions, and manage unique differentiators in a consolidated platform.

Whether you run a hospital, factory, car rental company, or any other type of enterprise, odds are many of your processes and operations are nearly identical to those of your competitors.

Therefore, the industry predefines most of your problem space. And most of that problem space has already been solved.

As such, any industry cloud worth its salt will have a few common features. First, the industry cloud must provide most of the functionality needed for the industry out of the box, especially the commodity functions. Second, it must be an open platform that enables customers and partners to develop innovative solutions. The platform needs to make it easy to connect and manage these solutions. Third, it should allow customers to ramp up or scale down capacity and processes according to demand. Finally, it should enable easy access to other business and technology services. For example, all the major cloud services today include common tools straight out of the box. While natural language processing (NLP) is now a common tool, the question is how to integrate NLP into your business. Across

all these features, your industry cloud should support your broader ecosystem.

I recently visited a manufacturing client that utilizes agile production methods to respond to both large and small customer orders. It's a very profitable business but it requires frequent reconfiguration of production lines. To optimize equipment performance, machine learning (ML) models analyze order data to determine necessary machine configurations and the optimal sequence for filling orders. The process works exquisitely, but it took a massive effort from the manufacturer's digital team to build it all by hand.

Instead, these capabilities can be derived from a single industry cloud. Offloading much of the building and maintenance of these processes can give data scientists more time to develop ML models that help the factory respond more quickly to orders. If machine vision is combined with ML models,

quality control teams can inspect a greater percentage of goods coming off the line. Spending more time on activities that really matter helps manufacturers scale their operations more rapidly than if they build functionality manually. These are the kinds of things that set a manufacturer apart.

With this combination of functionality in place, businesses can become more agile. When their main operational platform comes configured for the needs of a typical business in their industry, they can focus their energies on the portion of their operations that sets them apart. They can get straight to a digital representation of their business, their network of partners, their network of suppliers, their machines. Ultimately, it's about having the agility to develop the innovations that can truly make your organization unique.

EXECUTIVE PERSPECTIVES



STRATEGY

Cloud and software vendors are developing increasingly sophisticated and capable business functions as a service. With new opportunities for more sophisticated outsourcing, CEOs must clarify their organization's unique value proposition. Just as ERP standardized most back-office functions, leaders must identify which subset of their business functions are differentiators. Only now, the stakes are higher: the divisions being replaced are not finance or accounting, but those that comprise the heart of the business and influence strategic decisions.



FINANCE

CFOs interested in budget and compliance requirements may find two-fold benefits in cloud-based applications customized to industry needs. Industry clouds can help companies keep pace with technology and regulatory changes with less effort, freeing up talent for more value-added projects. CFOs should ensure close collaboration between finance, IT and compliance, risk, and legal functions so that all parties understand how to maximize the potential benefits of new cloud services.



RISK

CROs have an opportunity to integrate cyber risk management at the onset of new industry cloud deployments. Vendors' standard cybersecurity components may not meet an organization's application needs. As industry clouds drive more business functions, tailored cloud security is becoming more important. CROs and IT can make cybersecurity a differentiator of the organization's cloud tech stack instead of an afterthought. Especially for consumer-facing organizations, building in cyber protection at the onset can prove less costly in the long run.

ARE YOU READY?

KEY QUESTIONS

1

What nondifferentiating processes do you currently support that others in your industry also support? Do the vendors with which you have relationships offer industry-tailored solutions that could be more cost-effective?

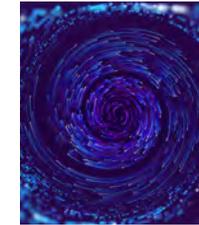
2

What technologies are critical to your ability to win in the coming years? How can you redirect more financial and development resources to these areas? Should you keep them in-house, or move them to the cloud?

3

Are you ready for a future that is always “fast approaching”? What changes can you make to your digital transformation strategy to create and nurture the capacity for change across systems and processes?

LEARN MORE



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Learn how leveraging industry clouds can maximize your transformation strategy by focusing on what you do best.



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See how organizations can reach their technology innovation targets by considering the latest in leading cloud native approaches.



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ENDNOTES

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