

# NAVIGATE YOUR DIGITAL TRANSFORMATION WITH CLOUD

HEALTHCARE AND LIFE SCIENCES  
INDUSTRY VIEW

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# INTRODUCTION

Cloud transformation, as part of the digital journey, will allow HLS enterprises to become nimbler, more flexible and scalable, and reduce the strain on overstretched systems.



The Healthcare and Life Sciences (HLS) industry is battling many challenges, such as competition from non-traditional players, increasingly sophisticated expectations from customers, demand for value-based pricing and enhanced scrutiny by regulatory agencies. These challenges, coupled with the usual business pressures to innovate, improve efficiencies and thereby

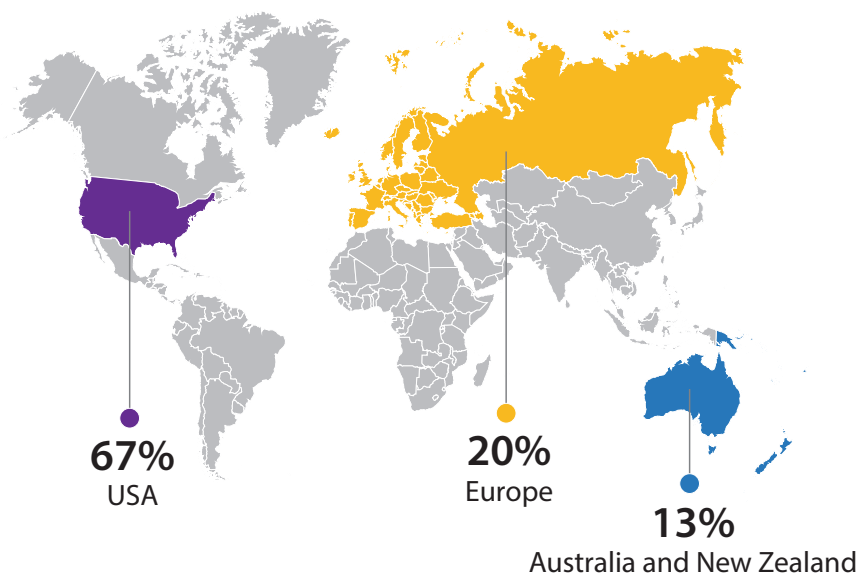
lift business performance, ensure a tough environment for HLS enterprises.

Abundant data and pervasiveness of advanced technologies for both the patient and business operations push HLS firms toward digital transformation. Cloud transformation, as part of the digital journey, will allow HLS enterprises to become nimbler, more flexible and

scalable, and reduce the strain on overstretched systems.

Our experience has shown us that HLS firms approach cloud programs cautiously. Concerns over data security, legacy systems and inadequate expertise prevent wider adoption.

Figure 1: Respondent geographies



Infosys surveyed 152 executives from HLS firms with over US\$1 billion in revenues across the United States, Europe, Australia and New Zealand (ANZ). The respondents were senior executives and leaders involved in cloud initiatives representing both technology and business functions.

The study aims to get a thorough understanding of ongoing and future cloud initiatives, both from strategic and implementation perspectives, and discuss the findings in this report.

# THE CLOUD CAST



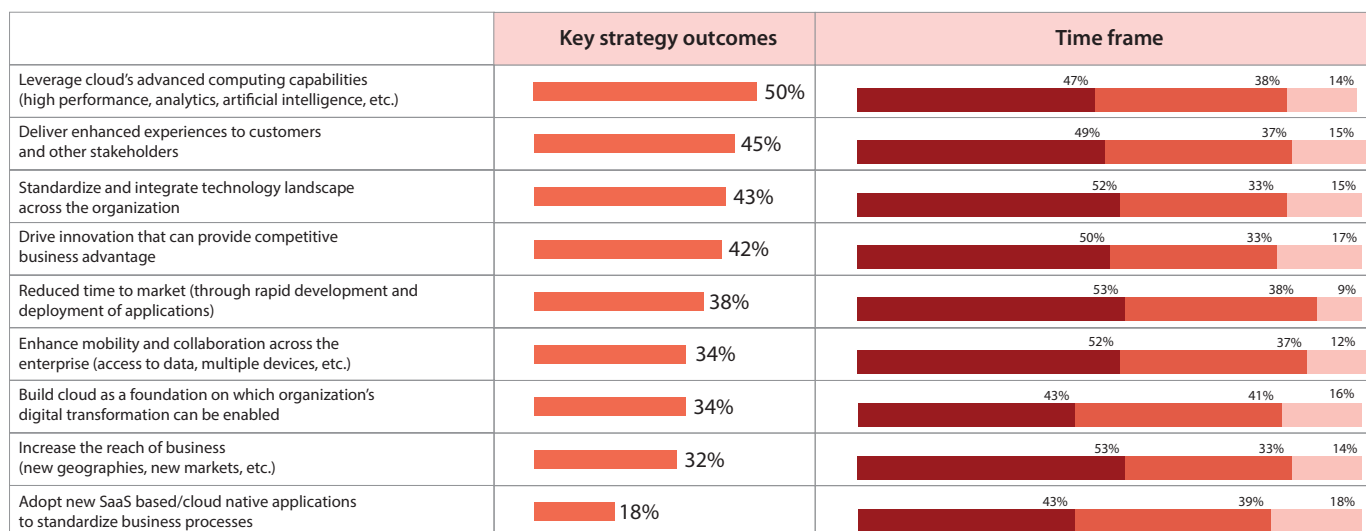
## Types of enterprise players

The survey solicited respondents' views on cloud adoption intensity as well as their plans over the next three years. The analysis of the responses showed the progress of cloud programs and identified four types of enterprises.

	Torchbearers 45%	Pathfinders 19%	Defenders 24%	Aspirants 12%
<b>What are the characteristics of this cluster?</b>	Enterprises with high adoption of cloud across functions, and seek to be fully integrated and a cloud-first organization	Enterprises with moderate cloud adoption, and actively seek to derive more business value from the cloud	Enterprises that understand the importance of cloud, but have a siloed approach and unsure about how to derive business value from the cloud	Enterprises with low adoption of cloud across functions, and mostly have a tactical approach towards the cloud
<b>Do they have an enterprise-wide strategy?</b>	Yes, and it is strictly followed	Yes, and it serves as a guideline	Yes, and it is followed strictly or serves as a guideline	Yes, and it is followed strictly or serves as a guideline
<b>What drives them to adopt cloud programs?</b>	<ol style="list-style-type: none"> <li>1. Emerging technologies</li> <li>2. Data security</li> <li>3. Scalability</li> </ol>	<ol style="list-style-type: none"> <li>1. Emerging technologies</li> <li>2. System availability and resilience</li> <li>3. Reduced IT costs</li> </ol>	<ol style="list-style-type: none"> <li>1. Competitive activity, reduced IT costs</li> <li>2. Emerging technologies, data security</li> <li>3. Scalability</li> </ol>	<ol style="list-style-type: none"> <li>1. Emerging technologies</li> <li>2. Data security, system availability and resilience</li> <li>3. Evolving customer needs</li> </ol>



**Figure 3: Key expected outcomes and timeframes for achieving them**



■ Immediate (0-1 year) ■ Mid term (1-2 years) ■ Long term (> 2 years)



*The main challenge we had in initiating cloud was the concerns posed around data security. Though this is addressed by encrypting the data, it is not a fast process. This resulted in the additional concern around the timelines which are envisaged.*

– Director at an insurance firm in USA



Respondents said deciding the right cloud approach (44 percent), availability of internal talent (39 percent), and alignment between IT and business (36 percent) were the critical concerns before initiating cloud programs. Australia and New Zealand cited the availability of internal talent (65 percent) as

a top concern, whereas U.S. (44 percent) and European (48 percent) firms considered deciding on the right cloud approach to be a more significant concern. Insufficient knowledge and expertise in the cloud among HLS firms explain the responses from participants.

**Figure 4: Concerns before launching cloud programs**

	Total	Geography		
		ANZ	EU	USA
Stakeholder confidence around return on investment	32%	30%	31%	31%
<b>Deciding on the cloud approach to adopt</b>	<b>44%</b>	<b>40%</b>	<b>48%</b>	<b>31%</b>
Significant reliance on external solutions providers	35%	40%	24%	54%
<b>Availability of internal talent to manage the transition</b>	<b>39%</b>	<b>65%</b>	<b>31%</b>	<b>15%</b>
<b>Alignment between IT and business on the road map</b>	<b>36%</b>	<b>45%</b>	<b>24%</b>	<b>23%</b>
Accountability to drive the transition	33%	55%	17%	23%
Organizational readiness and maturity of existing IT landscape	30%	50%	38%	23%
Building strategic and operational road maps	25%	30%	17%	23%
Overcoming postmigration challenges	23%	30%	10%	23%
Concerns with respect to enterprise information security	20%	25%	24%	31%
Need to continuously upgrade to new technologies	34%	45%	24%	23%

# UNDERSTANDING CLOUD IMPLEMENTATION EXPERIENCES



Respondents find it challenging to accurately estimate time and costs, select tools and technologies, and align with existing systems. Australia and New Zealand respondents ranked all three challenges equally high, while U.S. respondents felt aligning with legacy systems was a significant impediment, and European respondents said accurate estimation was the biggest concern.

HLS firms have a vast portfolio of legacy systems that are still central to business operations. Transitioning these systems to the cloud without causing business disruption is complex.

**Figure 5: Challenges faced during implementation**

	Overall
Application refactoring/tweaking to suit cloud architectures	5.45
Tracking and monitoring systems/processes on cloud	5.52
Aligning existing legacy systems/architectures and technology environments	5.61
Resource skillsets with cloud orientation	5.50
Accurate estimation of time and financial costs involved	5.64
Pace of execution/implementation of the initiative	5.55
Deciding on the choice of tools/technologies to pick from	5.62
Maintaining current service levels during transition	5.50
Lack of high levels of clarity in execution roadmap	5.37
Absence of an internal dedicated cloud team to drive the initiative	5.31
Promoting a culture change within the organization	5.42
Collaboration/integration with external service providers/stakeholders	5.45
Navigating existing agreements	5.58

On the scale of 7

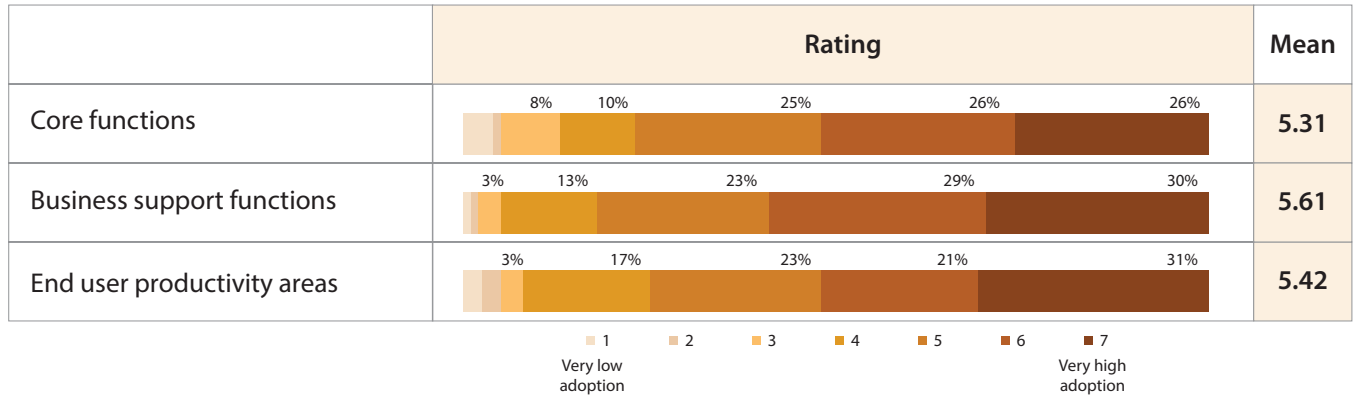


The business support function leads with 59 percent cloud adoption followed by the end-user productivity function at 52 percent. Australia

and New Zealand firms exhibited higher adoption rates across all three functions compared with European and U.S. firms. Issues related to legacy

systems and data security hold back HLS firms from adopting cloud programs on a larger scale.

**Figure 6: Cloud adoption across functions**

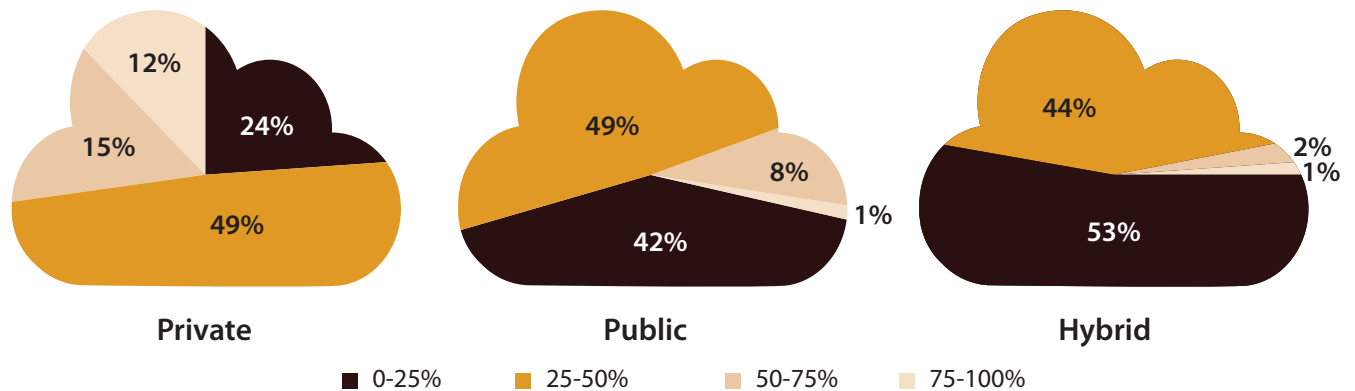


Respondents have a footprint across all three cloud modes — private, public and hybrid. HLS enterprises use public (42 percent) and hybrid (53 percent) cloud models for workloads up to 25 percent. For workloads

between 25 and 50 percent, they prefer private (49 percent) and public (49 percent) cloud models. Australia and New Zealand firms have a higher adoption of public and hybrid models for workloads below 50

percent. U.S. respondents said they use more of the public and hybrid models for workloads between 25 and 50 percent compared with European firms.

**Figure 7: Workload spread across the cloud models**



HLS firms choose the public cloud models to enjoy benefits such as scalability and faster pace of upgrading the IT landscape. Respondents still believe that the benefits from a private cloud model outweigh those of a public or hybrid model in most areas.

The prominent three-year goals across respondents include becoming a fully integrated, cloud-first organization (36 percent) and adopting an everything-as-a-service model (26 percent). A significant 69 percent of Torchbearers

and 41 percent of U.S. firms have set themselves the high goal of becoming a fully integrated, cloud-first organization.

## The cloud may begin with the boardroom, but it ends with IT leaders

The business executive leadership is actively involved in defining the requirements and making the final decisions on external vendors, whereas IT executive leadership engage throughout the cloud journey. Survey respondents said they relied on external vendors to help them across all stages of the cloud journey, from drawing up the strategy to managing the cloud landscape. The most common criteria used to evaluate external solutions providers are the capability to handle large changes (46 percent), pricing (42 percent) and the effectiveness of the proposed solution (40 percent).

## New technologies will have a tangible impact on the cloud

Respondents view artificial intelligence and machine learning (49 percent), big data analytics (47 percent), and the “internet of things” (41 percent) as the most value-adding technologies when adopted with the cloud.

**Figure 8: Technologies impacting adoption of the cloud**

	Overall
Artificial Intelligence/Machine Learning	49%
Big data analytics	47%
Internet of Things (IoT)	41%
Containers and Orchestration	39%
DevOps	38%
Hyperconvergence	32%
Edge computing	31%
Open-source (microservices, APIs)	25%

# NEXT STEPS IN THE CLOUD JOURNEY FOR HLS ENTERPRISES



With the future pointing to patient centricity and value-based care, HLS firms have rightly prioritized enhanced customer experiences as a key expected outcome from cloud programs. Cloud transformation can deliver a multitude of benefits, each of which will boost business performance and offer valuable competitive advantages.

Despite the widely acknowledged advantages of adopting the cloud, there is low adoption across the HLS industry. The Infosys study revealed that 45 percent of our respondents belonged to the progressive Pathfinders cluster, which has set a benchmark for other firms to follow.

Enterprises belonging to the other clusters must understand how the Torchbearers overcome typical challenges plaguing the industry, such as legacy systems, data security concerns and lack of skilled resources to progress their cloud programs.

Given the diverse challenges and complexities characterizing the cloud journey, enterprises must consider working with a competent external partner that can add value to business and technology issues. In other words, the partner must contribute to both the cloud strategy and implementation.

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