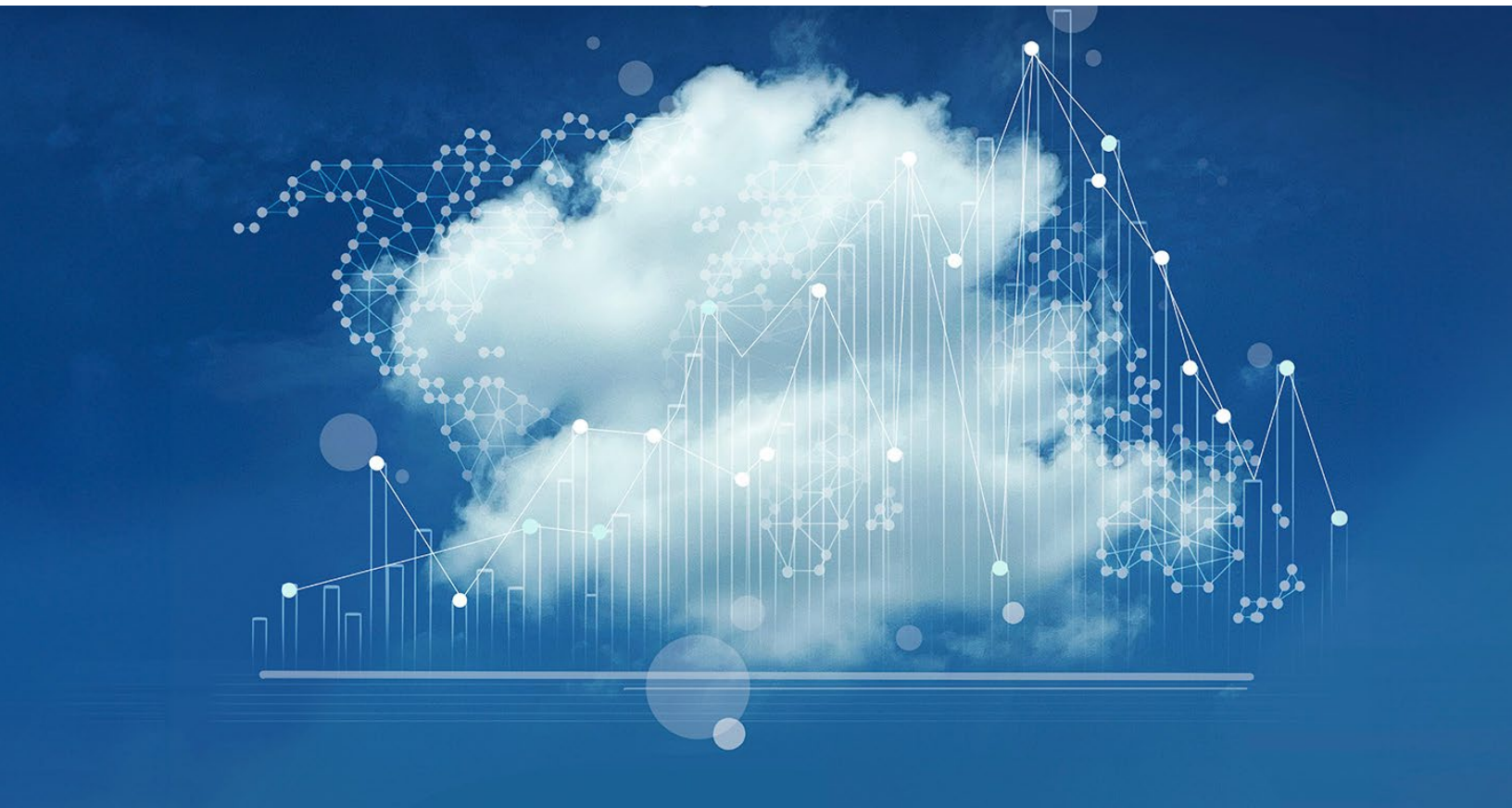


Ending the confusion in cloud transformations: The dashboards and metrics everyone needs

A cloud transformation has a much greater chance of success if companies know what to track—and how to track it.

by Chhavi Arora

with Emily Wu, Hamilton Williams, and Isabelle Tamburro



The promise and peril of cloud is a common refrain in many C-suites: huge economic potential and regularly underperforming reality. What's much less clear, however, is what to do about it.

Out of the more than 80 enterprises McKinsey profiled for its CloudSights database, 40 percent have found limited value in their cloud programs.¹ In addition, half of companies five or more years into their cloud journey still have not achieved 20 percent cloud adoption. The underlying causes are often hard to pinpoint and articulate, or are simply caught too late to stop the damage. Even for companies that are well on their way to achieving value from cloud, it is often difficult to communicate progress to stakeholders and make a credible case, based on clear ROI data, for substantial new investments.

Given the significant resources of time, money, and people that companies invest in cloud transformations, it's surprising how poor the metrics and objectives and key results (OKRs) used to track progress often are. For example, some companies will exclusively use point-in-time metrics (for example, number of applications migrated by a given date) to understand where their cloud program is. These metrics, however, frequently fail to accurately capture the full picture of progress over time. Other cloud programs will set their OKRs without involvement from the business side and, as a result, struggle to actually measure and articulate the enterprise value cloud is creating. In many cases, cloud teams will also lack clarity over who is accountable for which metrics and how they are being reported and used. The difficulty often boils down to lack of clarity about what is important to measure and lack of rigor in implementing a tracking program.

Well-designed dashboards and central governance drive transparency and increase data-backed decision making in effectively identifying roadblocks and resolving them. Great dashboards help visualize trends and issues over time to identify when and where leaders should intervene. OKRs reflect the enterprise vision to ensure cloud is truly supporting top-line business goals, and they are consistently and clearly tracked with key owners and stakeholders for each set of metrics.

In our experience, there are eight dimensions that are important to almost any cloud transformation, and each has a corresponding dashboard (Exhibit 1). Different metrics will take precedence with different stakeholders, and it is important to tailor each dashboard to an organization's specific cloud program and stakeholders.

For a subset of these dashboards—dimensions C, D, and H, highlighted in gray in Exhibit 1—we have drafted examples of what their appropriate metrics might look like and what would be needed to set them up. Each dashboard example is focused on achieving one or more of the cloud program's objectives and includes metrics that help track progress toward the relevant key results (KR).

¹ CloudSights is a database made up of more than 80 interviews conducted in North America and Europe with cloud leaders from companies of various sizes and industries.

Exhibit 1

Eight critical dimensions can be quantified and tracked across most cloud transformations.

Dashboard dimension	Description	Examples of metrics	Example deep dives included
A Executive summary	Curated top-level program and business objectives and key results (OKRs) to inform overall progress	• Top OKRs from other dashboard dimensions (eg, \$ revenue, % of apps migrated) • Status against cloud program milestones	
B Business value and use cases	Transparency into business objectives and use cases enabled by cloud adoption	• Speed to market • % of customers using new solutions • Average customer satisfaction score • \$ revenue gained from cloud-enabled use cases	
C Cost performance	Tracking dollars budgeted, spent, and saved on cloud costs, cloud-relevant contracts, and resources for the duration of the migration	• \$ cloud costs (forecast vs actual) • % of previous contracts closed • % or \$ of labor savings realized	
D Application and data migration	Progress of application portfolio and data transition to cloud, identifying stalled vs high-performing teams	• # of apps migrated (planned vs actual, by business unit, data center) • # of apps retired • Average # of weeks to migrate an application	
E Infrastructure modernization	Reporting on infrastructure modernization initiatives including decommissioning as well as usage of standardized resources to improve operational ease and scalability	• Uptime/resiliency • # of servers decommissioned • # of apps retired or migrated per data center • Automated vs manual deployment ratio	
F FinOps	Detailed reporting of cloud usage, cloud service provider (CSP) commitments, and costs, allowing teams and leadership to identify opportunities to optimize spending	• \$ cost per app, feature, or microservice • % utilization of special rates (eg, reserved instances, commitment discounts) • % difference between forecast and actual • Average CPU utilization • Savings opportunities identified over total spend	
G Security and risk	Assessment against security scorecard to identify risks and vulnerabilities in cloud	• % of workloads with virtual machines (VM) using CIS¹-compliant images • % of VM instances unpatched in >2 O/S patch cycles • % of anomalies detected that are reviewed and resolved in SLA²	
H People, products, and operating model	Measurement of people readiness (including hiring and upskilling) and impact of new operating model and product changes supporting cloud adoption	• Employee satisfaction scores • # existing vs planned hiring • # of users completed training pathways • Lead time to deploy • % of on-time SLA²	

¹Center for Internet Security.

²Service-level agreement.

Dimension C: Cost performance

How are we tracking costs against our program's projected budget and savings?

As cloud programs require large investments, there must be a clear, up-front financial case made for cloud to ensure that the investment pays off and costs don't balloon. A *cost performance* dashboard tracks the projected (actual plus forecast) costs and savings against the budget developed for the program, allowing leaders to dig into which areas are overspending and where teams can achieve greater savings based on learned experience (Exhibit 2).

Key stakeholders: CIO, CFO, head of procurement

Frequency of stakeholder review: Monthly

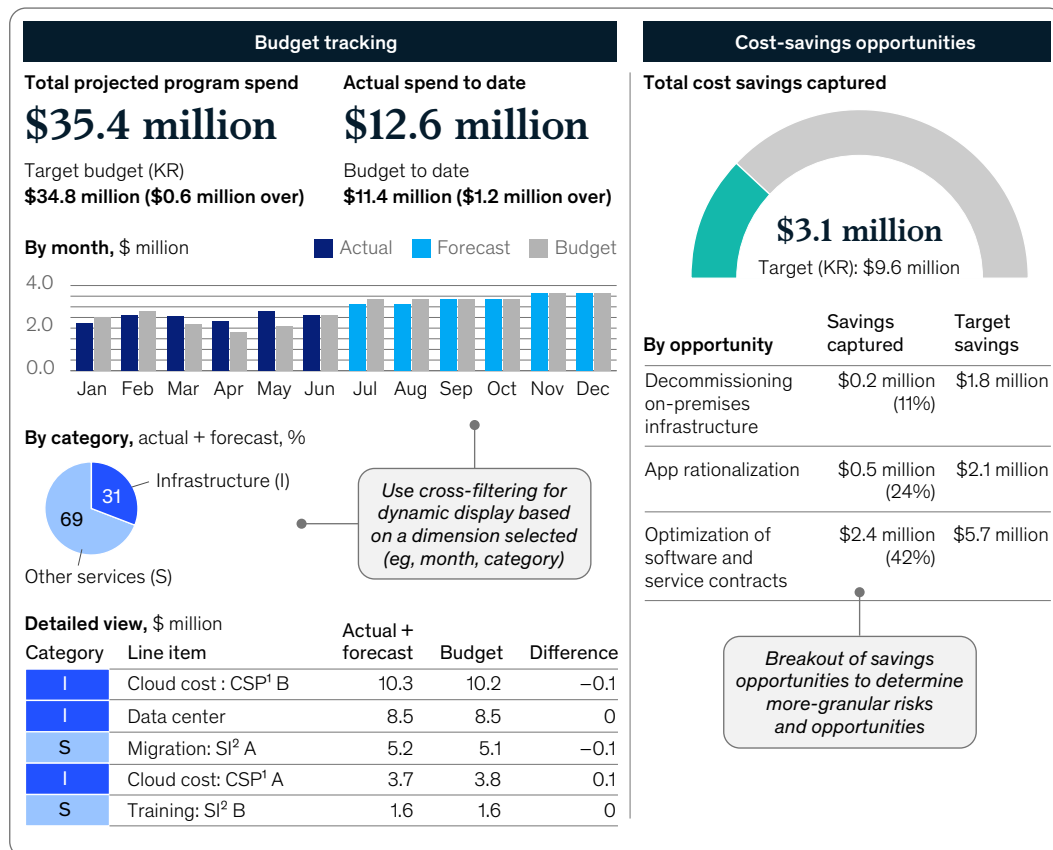
Examples of metrics: Monthly infrastructure and application costs, business case projected savings and value, contracts database, procurement team's usage data, enterprise resource planning (ERP) general ledger, financial planning and analysis (FP&A) tooling (for example, Anaplan)

Exhibit 2

A cloud cost-performance dashboard includes a number of useful metrics.

Illustrative dashboard

Objective: Keep spending on cloud transformation on track with budget



¹Cloud service provider.
²Systems integrator.

It is often senior leadership who must approve cloud budgets and business cases (and changes to them), so it is important to provide digestible, relevant cost information to track progress and create opportunities for intervention, such as renegotiation of a contract or changes to a migration plan. A global automotive supplier was struggling to understand and achieve financial progress during a multiyear cloud journey. When it put in place monthly dashboards and metrics to increase visibility in this area, it soon realized that it was missing out on a number of important cost initiatives, including avoidance of capital expenditures on decommissioning servers. The team worked with IT finance to determine which servers' decommissioning would generate the most savings and tracked this closely over time, avoiding more than \$500,000 of capital expenditures within six months.

Dimension D: Application and data migration

What proportion of our applications and data have we migrated to the cloud?

As the value of cloud relies on transitioning applications and their accompanying data at scale, a core transformation dimension is understanding progress against this migration. An *application and data migration* dashboard is used to understand the overall scope, progress, and velocity of the migration (and any corresponding application or system retirements), potentially broken down by business units, application portfolios, and/or application owners (Exhibit 3). Since many applications will require some level of modernization (as opposed to simply lifting and shifting them to cloud) to reap cloud's full benefits, applications should also be tracked by progress toward their final disposition. This type of dashboard will help identify the migration and modernization outliers and allow for refinement of the overall process as future waves of workloads are migrated or retired.

Key stakeholders: CIO, chief data officer, head of infrastructure, application portfolio leads

Frequency of stakeholder review: Weekly to monthly

Examples of metrics: Configuration management database (CMDB), application information, native cloud service provider tools, target disposition and migration plans, system integrator timeline, cloud business cases

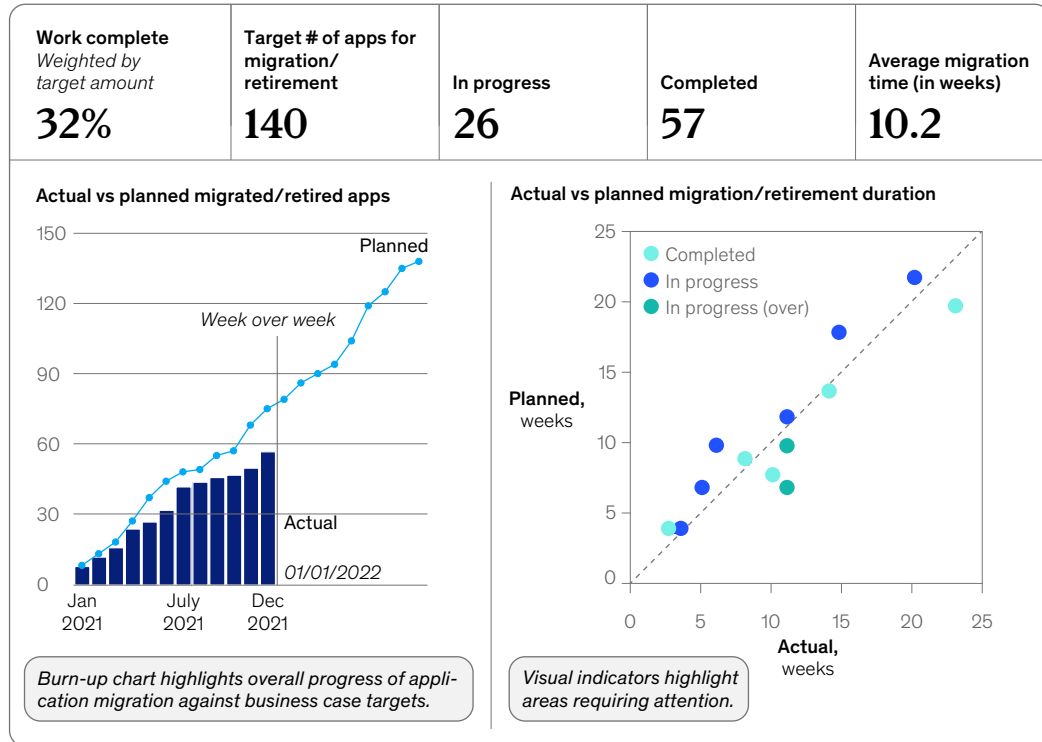
A clear dashboard with changes over time will allow the cloud team to quickly intervene on migration delays and manage changes to the overall timeline and business case as needed. At a European logistics organization, the cloud program office put in place weekly readouts of progress, including dashboards and metrics, measuring workload migration. When the head of cloud noticed that a particular team was consistently behind migration targets, he intervened, providing the team with additional resources and support that allowed them to catch up to the migration timeline within the next month.

Exhibit 3

A cloud application and data migration dashboard includes a number of useful metrics.

Illustrative dashboard

Objective: Complete transition of app to target disposition (eg, migrate/retire) by end of year



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Dimension H: People, products, and operating model

Do I have the right people, products, and operating model to successfully execute my cloud transformation and adopt our new ways of working?

In addition to all the technical changes cloud brings, organizations will need to change the way they work—their *people, products, and operating model*—to get cloud's full benefits (Exhibit 4). Tracking common operating metrics, such as those from DevOps research and assessment (DORA), allows leadership to see the benefits coming from cloud or intervene where value is falling short. Part of improving cloud operations requires putting the right talent in place through both internal upskilling and external hires.

Key stakeholders: Heads of recruiting, learning, human resources (HR), and product

Frequency of stakeholder review: Weekly to monthly

Examples of metrics: HR workforce software, recruiting tools, employee training and certification logs

Exhibit 4

A people, products, and operating model dashboard could include these metrics.

Illustrative dashboard



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Since people-based objectives often require people-based interventions, this type of dashboard will greatly improve leadership's ability to make targeted interventions through activities such as increasing recruitment activity, implementing new training incentive programs, or making changes to the product team structure.

For any company beginning or resetting its cloud-metrics journey, it is important to begin with a clear vision based on business objectives and define metrics and initiatives to support them. As cloud programs and value tracking mature, individuals should be assigned to “own” metric targets on the dashboards, report against them, and look for opportunities to automate the data tracking. A central governance team or cloud adoption office can regularly review progress against these metrics, flag risks and roadblocks, and coordinate interventions, such as assigning extra cloud resources to a struggling business unit. Organizations can set up a standard cadence to meet with key stakeholders to ensure that the cloud transformation is getting the desired visibility.

Implementing the technology and processes to support tracking cloud value capture is a significant challenge. Compiling data from multiple parties and data sources often requires development and maintenance of a dedicated resource.

A pharmaceutical company faced this issue during its cloud modernization program. Multiple parties were providing progress updates in their own formats, making it difficult to judge and compare progress or to have a view of the overall program. To address this issue, the team brought in a dedicated data modeling and visualization expert to develop a consolidated reporting dashboard. The team focused on creating standards for reporting to be used by all parties and automating the delivery of reports that tracked progress against objectives across workstreams, which went directly to program leadership and accountable parties every week or month. This approach made it much easier for workstream owners to track their progress, increasing their accountability. In one case, the team realized that a set of reports that focused on application migration did not include orphan-server shutdowns once apps were migrated, and, as a result, the full value of the migration effort wasn't clear. The team added reporting on the status of 2,000 servers that would no longer be needed, shut them down promptly, and realized \$30 million in savings.

Program governance teams can utilize reporting tools like Power BI, Tableau, and Qlik, which can pull data using different connection methods (such as manual Excel/CSV uploads, ODBC, REST API) and any additional data workflow automation tools available to support automated refreshes, data cleansing, and data normalization.

The cloud transformation journey is difficult and often doesn't go according to the initial road map and business case. Through improved tracking, companies can better understand and de-risk their progress, manage stakeholders, and focus their efforts toward driving business value through cloud.

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