amdocs services

**Taking the
communications
industry to the cloud**
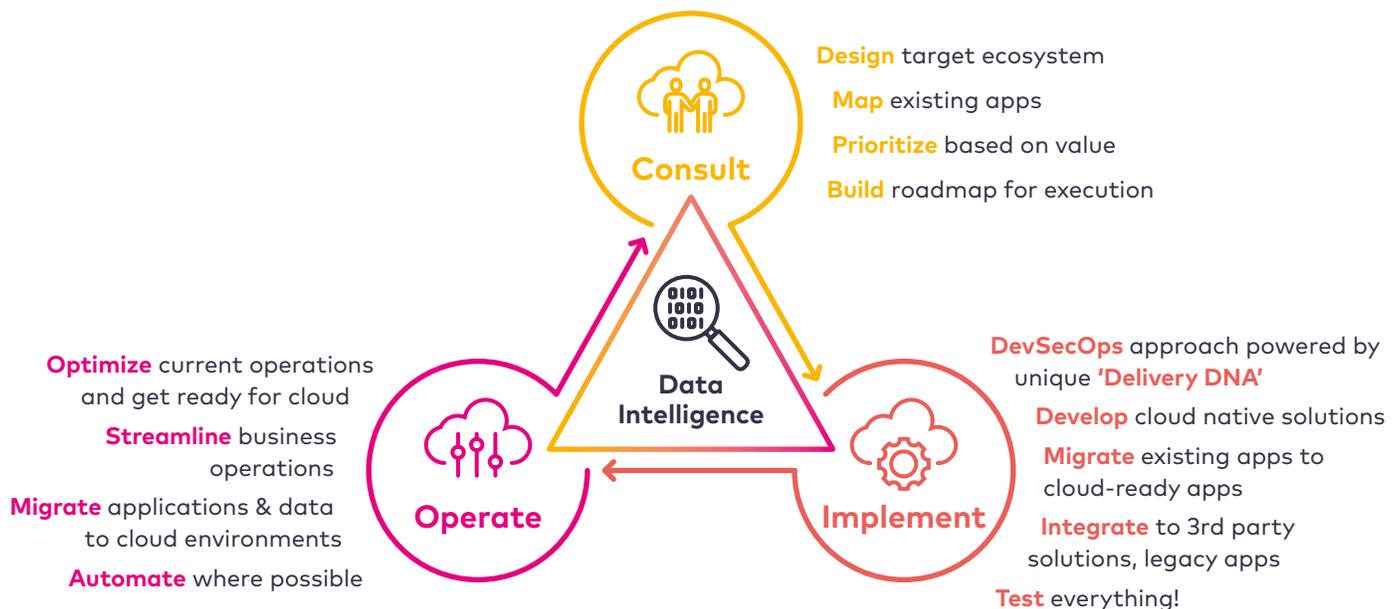
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introduction

As the communications & media industry evolves and takes steps to continuously innovate, service providers are beginning to accelerate their move to the cloud, building on the progress made with ongoing digital transformation initiatives. Moving to the cloud will enable service providers to become more agile, so that they can deliver more engaging customer experiences, launch new services quickly and optimize their operations.

While the ultimate goal is to have all, or at least most, of the workloads running on the cloud, the journey is long and complicated. Getting there involves much more than simply implementing new cloud-based products. It requires transforming existing systems and processes, and driving a new mindset for IT strategy, development and operations. Service providers therefore need a partner who will help them on this journey. Amdocs Services provides the full set of services these players need to make their journey successful, ranging from consulting through to ongoing operations.

Amdocs Services covers a range of areas, including:

· **Consulting services** – helps design the roadmap for success, based on each individual customer's unique needs and situation

· **Migration and implementation services** – helps deploy solutions to the cloud, whether it is delivering new solutions or migrating existing applications, supported by an end-to-end DevSecOps organization and practice

· **Operations services** – ensures seamless operations across a hybrid infrastructure and ecosystem of IT and business operations, while optimizing total cost of ownership

· **Data intelligence** – leverages the cloud to ensure that data is more accessible, available and visible in order to drive real-time data-driven insights across the organization

Consult

Design target ecosystem

Map existing apps

Prioritize based on value

Build roadmap for execution

Data Intelligence

DevSecOps approach powered by unique **'Delivery DNA'**

Develop cloud native solutions

Migrate existing apps to cloud-ready apps

Integrate to 3rd party solutions, legacy apps

Test everything!

Implement

Optimize current operations and get ready for cloud

Streamline business operations

Migrate applications & data to cloud environments

Automate where possible

Operate

overcoming the challenges of the journey

Where to begin

While many service providers have already taken initial steps into the cloud, most have not yet taken the big leap to move most of their workloads. One of the key blocking factors is that since they have so many applications and systems, they often do not know where to start. Through its comprehensive solution set, Amdocs not only helps service providers understand where to begin and what steps they need to take, but continually refines the plan based on operational feedback, which helps pinpoint and prioritize the applications that should be migrated to the cloud and the business benefits that can be attained.

Managing in a hybrid environment

One of the key challenges any organization faces when beginning their journey to the cloud is how to manage the interim period during which some applications are on the cloud and others are still on-premise. Using a unified governance approach, Amdocs services helps services providers manage the hybrid infrastructure environment with services that span their entire ecosystem, ensuring uninterrupted operations and optimization of services across all applications.

Having the right skills

Moving complex telecom systems to the cloud requires multifaceted and interlinked knowledge of the application domains and functionality, new development methodologies and toolsets, and cloud infrastructure know-how. Amdocs has the full complement of expertise to support service providers, and as such, is uniquely qualified to safely and successfully deliver cloud migration projects and operate service provider systems on the cloud.

the amdocs advantage

Delivery Expertise – industry expertise + continued upskilling

With over 35 years' industry expertise, Amdocs has accumulated the deepest domain knowledge in all areas of service provider systems and operations. The company is a leader in B/OSS systems for the communications & media industry, and has successfully managed a wide range of complex transformations for service providers as that industry has evolved. Amdocs consistently delivers on over 95% of its projects. In calendar year 2020, despite the corona pandemic, they delivered over 300 successful go lives.

This expertise is critical in ensuring that the next generation of transformation to the cloud will be successful. Similar to other vendors, Amdocs can support moving simple productivity applications and related ancillary systems to the cloud. While this can provide some tangible benefits, the bigger material impact however, and the leap in value of moving to the cloud are only realized when the heavy and complex mission-critical workloads are modernized and moved to a cloud-based operations model. This is where Amdocs' proven track record of transformation and managed operations makes the difference.

In addition, Amdocs continues to invest in having the most capable and effective teams. Through on-going and continuous "on the go" upskilling, Amdocs ensures that its teams maintain and grow skill sets for new technologies, helping ensure that they can continue to deliver increased value to customers.

Recent efforts include ongoing upskilling campaigns for Amdocs employees focused on areas such as:

• Cloud-native development technologies

• Cloud computing infrastructure

• CI/CD and DevSecOps methodologies

• AI/ML & automation best practices & tools

These initiatives help ensure that Amdocs employees continue to learn new technologies, and then augment those skills with their industry expertise to fully support service provider cloud initiatives.

Amdocs automation tools – providing a consistent foundation for services

Amdocs Services invests in building a robust set of tools and platforms to provide a consistent level of services across all of its customers. Amdocs leverages best-of-breed and open-source tools and customizes them to address specific needs of the market. Much of the intellectual property encapsulated in the tools is based on Amdocs' industry expertise, with highly focused data models, test cases and automation geared to communications service provider requirements. Importantly, these tools support operations automation for cloud and hybrid IT environments. Amdocs has also made contributions to the open source community, such as testing frameworks for Linux Foundation tool sets.

Amdocs leverages the latest AI and automation tools, providing streamlined services, leading to higher quality, faster time to market and increased customer satisfaction. Some examples include:

- AI and ML is used extensively for automated test scenario definition, predictive fault detection, as well as detection of unknown fraud and revenue leakage issues. Leveraging Amdocs' industry focus, AI and ML models used are specifically tuned to the needs of the communications market

- Extreme automation is used in many use cases, including for auto-ticket resolution, test automation and fraud remediation. Amdocs leverages its over 35 years working with service providers to create common use cases for automation, greatly reducing time to deployment and increasing accuracy in operations

- CI/CD tool chains and technology extensions/add-ons are used to support faster development and deployment of new features, leveraging containers and microservices

Cloud ecosystem – partnering with industry leaders

Amdocs works with all the major public cloud vendors, including AWS, Microsoft Azure and Google Cloud Platform, and assists customers in developing applications that leverage the tools available on those platforms. At the same time, Amdocs helps to optimize customer operations, regardless of the underlying cloud platform vendor. Amdocs provides a holistic, agnostic set of solutions that leverage the best capabilities of each of these partners, while providing customers with the security of working across a multi-cloud ecosystem.

offering overview

Amdocs provides a broad portfolio of services, supporting both our own products (e.g. CES 20) as well as any third-party or custom-built applications. Amdocs supports the entire lifecycle, from consulting and design through to ongoing operations, on-premises and/or on the cloud. This complete view of solutions enables Amdocs to continually deliver incremental value for its customers.

To answer the varying needs of customers who will have different levels of maturity in their cloud and digital transformation journeys, Amdocs Services is divided into four key domains:

Cloud consulting services

Amdocs offers a comprehensive range of consulting services that prepare organizations for moving to the cloud. Consulting is a recurring engagement – a cyclical journey from initial cloud strategy through re-evaluation cycles based on inputs from the implementation and operations.

Through cloud consulting, Amdocs helps service providers identify the applications to be migrated to the cloud, the methodology to migrate, and the timing. This is based on Amdocs' comprehensive understanding of the complete service provider ecosystem, the interrelationships between applications, and the value that migrating can bring to the customer.

Examples of cloud consulting services include:

- **Cloud strategy** – building an end-to-end cloud strategy that includes assessments of systems and architecture, a prioritized plan and roadmap for the cloud migration of IT systems, a migration strategy for each system, as well as organizational enablement, education and upskilling

- **Domain modeling** – workshop-based methodology that creates alignment between technical and business stakeholders to enable business-driven technological transformations for service providers

- **Application assessment** – assessment of application readiness to move to the cloud, as well as of the effort, feasibility, complexity, cost and value of cloud migration. This allows the right migration path to be determined

Cloud implementation services

Once a strategy has been created, Amdocs assists in implementing the plans developed in the consulting phase, moving customer applications to the cloud in accordance with the defined roadmap. Amdocs Services helps customers deploy new cloud-based solutions – whether it's delivering an Amdocs product (e.g. CES20), integrating partner solutions (e.g. by leveraging Amdocs iPaaS) or migrating an existing application into a cloud environment (through redesign/modernization, replatforming, lift and shift, etc).

Implementation can follow one of the following paths:

Migration & modernization
Amdocs' migration services help move service providers from traditional IT environments to a modern, cloud-based environment and operations approach. As industry specialists, Amdocs brings skilled professionals to projects – from engineers to industry leaders – who have executed migrations in telco environments and have expertise in telecom data, systems, IT and business environments, as well as cloud. Examples of these services include:

- **Application migration** – Amdocs migrates applications and services to the cloud in a sustainable manner to ensure the service provider continues to draw value from their past investments. They do this by building a cloud readiness assessment (including of both the service provider's technology and its organization) to flesh out the timeline and order of operations for the migration, in addition to adoption frameworks and learning paths to ensure the organization is ready to reap the benefits of the cloud

- **Cloud migration implementation** – Amdocs helps customers maximize the value of migrating to the cloud, while smoothing that migration. Moving to the cloud represents a fundamental shift in the way organizations work. Changes must be made not only to technology, but also to the way people work together and the processes with which they work. Amdocs helps ensure these changes are implemented in a way that mirrors the customers' new operating model. Accordingly, teams are introduced to the model early on and have a part in building it, rather than being blindly on-boarded to new systems and processes. Amdocs migrates applications according to the agreed preferred migration method

- **CI/CD automation** – Amdocs enables the implementation and execution of a continuous integration and delivery approach, from development through to production

Cloud-native development services

Amdocs offers expert rapid development of high-quality full-stack cloud-native custom applications. In addition to actual application development, Amdocs co-develops with the customer and through knowledge transfer and cooperation, helps upskill the customer development teams. For example, Amdocs institutes processes and techniques that take full advantage of cloud capabilities, establishes blended scrum teams, provides training to upskill customer expertise, and executes programs together with the customer, such as for migrating monolithic applications to microservices.

Examples include:

- **Center of excellence** – provides the leadership, best practices, support, documentation and/or training to align teams and standardize processes amidst change

- **Team acceleration** – provides training, skills and methodologies at the team level to enable client teams to learn new languages, development skills, design patterns and mindsets, and work together using new methods adapted to the cloud

- **Cloud remediation** – provides custom analysis, discovery, recommendations and implementation to solve specific business challenges in the cloud

Delivery of Amdocs cloud-native products

Amdocs' cloud-native products are delivered in accordance with Amdocs' DevOps practice, an evolution of the company's "product-led services" model that leverages new technologies, accelerated automation and innovative methods to integrate short development and operations cycles in a continuous way to deliver value faster. This practice has four main pillars:

- **Design-led and customer-focused approach** – starting with customer needs and pain points, Amdocs defines what must be delivered and then works out the best way to design and deliver it to provide value in small increments. Amdocs begins projects with the customers' most urgent needs in mind while leaving room to making adjustments based on changing priorities

- **Execute in small iterations** – projects are divided into an initial Minimum Viable Solution (MVS) followed by multiple Minimum Testable Value (MTV) or epic releases, allowing iterative addition of functionality to deliver continual business value

- **Breaking the silos** – to deliver in small iterations, Amdocs breaks the silos between teams to allow them work together efficiently. The approach seeks to deliver business value, not applications, so each scrum team contains all the relevant roles. With some customers this goes even further, with a growing trend of co-development where the Amdocs-customer silos are broken and development teams work together by providing a common platform and set of practices they can use to create and deliver software faster, helping to reduce time to value and improve quality

- **Technology and automation as enablers** – all teams work on standardized tools, leveraging automation for tasks not requiring human intervention. This reduces human error and supports increased quality and efficiency throughout the project. Amdocs' self-developed platforms streamline delivery of the company's cloud-native products with platforms such as **SWP++**, a true CI/CD platform that optimizes the release manager's time, while syncing and automating tasks, thereby saving up to 94% of release manager's time. Amdocs' *Microservices360* (MS360) is the company's end-to-end carrier-grade accelerated microservices development platform designed for its own new generation of cloud-native products. It provides a robust end-to-end solution for both Amdocs and service providers to develop and deploy, at scale, cloud-native software on any cloud or clouds. Of particular importance is the potential for co-development between Amdocs and the service provider – both using the same environment. In co-development, Amdocs can implement feature-rich, complex microservices and expose their interfaces for the service provider's developers to add functionality, especially user interfaces

Other critical services offered by Amdocs for the implementation of any cloud strategy include:

Integration services
One of the key challenges of migrating applications to the cloud is to ensure that existing integrations to legacy systems continue to run smoothly. Amdocs Integration Services, powered by Amdocs iPaaS provides this ability, combined with prepackaged TM Forum connectors and open APIs, to ensure a smooth, fast integration across the hybrid ecosystem. As new cloud-based products are rolled out into the service provider ecosystem, whether they enable new capabilities or are replacing legacy systems, Amdocs' integration services provide the ability for the applications to integrate seamlessly with the other applications.
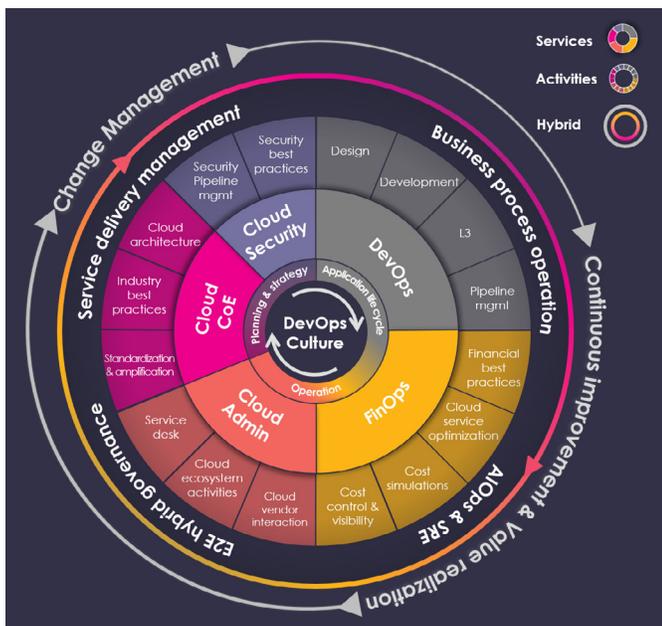
Testing services – Amdocs Quality Engineering (AQE)
As applications are migrated to the cloud and new features developed, quality engineering becomes more critical than ever. AQE helps ensure that cloud-based applications meet ALL the functional and non-functional requirements for both applications being migrated to the cloud and new developments, including:

- **Feature testing** – ensures the new cloud application meets all functional specifications, while verifying that the migration to the cloud has not impacted functionality. AQE automatically selects the test cases to run in order to validate the new application quickly and efficiently

- **Performance testing** – confirms the cloud environment supports performance requirements based on projected user volumes. AQE leverages production data to test most likely scenarios and simulates production environments to identify potential issues

- **Security testing** – cloud environments introduce new security risks, which must be tested to ensure that security meets the customers' standards. By introducing security testing early in the process, gaps and threats can be identified and remediated quickly to ensure full security compliance

Cloud operations services

Amdocs cloud operations services take full responsibility and accountability for service providers' hybrid IT environments, e.g. multi-cloud and on premise/data centers. By using a robust automation platform, as well as DevOps tools and extensive monitoring and governance layers, it provides operators with total visibility of application performance and financial operations (FinOps). All Amdocs cloud operations services are configurable, to enable the 'shift-left' of teams while eliminating the need for development coding.

Amdocs Cloud Operations span across "planning & strategy" (include Cloud CoE and security), "application lifecycle" (DevOps) and "operations" (including cloud admin and FinOps).

Key services offered include:

Cloud CoE
- Guarantees high adoption of cloud practices (well-architected practice, organization) via consulting services
- Standardizes and amplifies best practices related to cloud use in the customer ecosystem
- Development of new product-agnostic best practices and tools in the customer ecosystem

Cloud security
- Scales infrastructure and unique capabilities to keep the customer ecosystem secured and compliant across any infrastructure (IaaS, PaaS, SaaS, private virtualized cloud and on-prem)

DevOps
- Collaborative development methodology
- Improves time to market and ability to scale according to customer needs
- Skilled workforce e.g. cloud architects, developers, DevOps engineers, SRE engineers

FinOps
- Provides holistic (application & cloud platform) view, insights and call to action enabled by AI

Business process services

Amdocs also serves business operations by optimizing business processes (such as order-to-activation and request-to-solution) across hybrid, multi-cloud and partner ecosystems. These services leverage Amdocs' IP for automating and managing business processes regardless of the underlying IT. Services include:

- **Order fallout management service**
  Delivers automated remediation and high-quality service delivery for consumer and enterprise customers across lines of business

- **Business operations as a managed service**
  Leverages the Amdocs Command and Control Center with its back-office and automation agents, as well as the Amdocs Automation Center of Excellence

- **Business process automation and automation command and control**
  Provided by Amdocs' Automation Center of Excellence, with its expertise in implementing various automation and intelligence technologies, including smart virtual agents/robotic process automation (RPA), coupled with a service for monitoring and managing multiple automations for orchestration and remediation

Cloud Data Services

Amdocs Cloud Data Services helps service providers extract the most value from their data. By helping move their data infrastructure to the cloud, it helps them achieve greater value through:

- Cloud scalability that addresses rapidly changing and expanding storage and data processing needs, without the need to worry about data capacity

- Cloud data accessibility (with appropriate security and access governance):

  - Provides greater "data democracy", allowing those people who require rapid access to data to do so easily, and enabling them to then analyze the information and apply insights to their functions

  - Enables data models that can incorporate more data from global operations, leading to more accurate and valuable insights

- Utilizing automation, analytics and AI Infrastructure for data management, enrichment and model building

  - Data intelligence services enables faster time to insight by applying MVD (minimal viable data) techniques with multiple intelligent technologies

Services include:

- **Data fabric** – data management solutions to modernize and cloudify data infrastructure

- **A3 (Automation, Analytics, AI)-based solutions** – to monetize insights & personalization

- **Cross-DataOps and MLOps** – cloud operations and governance AI-based solutions

conclusion

Amdocs provides a wide breadth of services designed to help service providers in the communications & media industry move to the cloud, providing them the agility to launch new services quickly, while delivering a better customer experience and optimizing their operations and costs. Moreover, leveraging unparalleled industry experience and a track record of delivery excellence, Amdocs provides the security and confidence these players need to effectively execute this journey.

about amdocs

Amdocs' purpose is to enrich lives and progress society, using creativity and technology to build a better connected world. Amdocs and its 26,000 employees partner with the leading players in the communications and media industry, enabling next-generation experiences in 85 countries. Our cloud-native, open and dynamic portfolio of digital solutions, platforms and services brings greater choice, faster time to market and flexibility, to better meet the evolving needs of our customers as they drive growth, transform and take their business to the cloud. Listed on the NASDAQ Global Select Market, Amdocs had revenue of $4.2 billion in fiscal 2020. For more information, visit Amdocs at www.amdocs.com.

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