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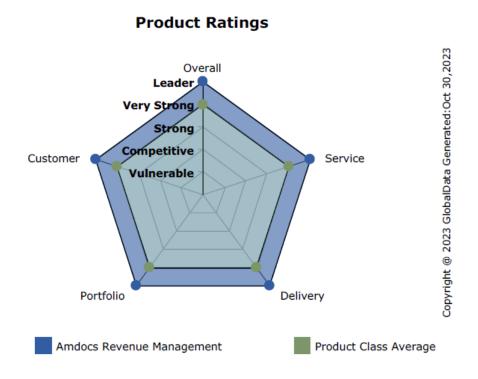
Amdocs Revenue Management

Product Assessment Report - Revenue Management

Report Summary:

Amdocs continues to add features to its revenue management solutions to keep pace with shifting market trends. This has helped CSPs streamline their financial operations with advanced billing, monetization strategies, and digital solutions.

Summary



What's New

- August 2023: Amdocs has expanded its multi-year business relationship with Bell Canada to migrate core applications to the cloud. This will see Bell moving Amdocs' core systems, including billing, from their on-premises data center to the public cloud.
- August 2023: Singapore's M1 selected Amdocs to power its prepaid platform. The new platform is the latest step in M1's digital transformation journey; Amdocs' monetization engine enables M1 to introduce exciting offers and innovative bundles to meet customer-specific needs.
- **February 2023:** Telefónica Móviles El Salvador, a Salvadoran telecommunications company, selected Amdocs Charging as a first step in its business support transformation. The new solution will upgrade Telefónica's Móviles El Salvador's charging systems and its surrounding environment.
- January 2023: Amdocs expanded its strategic collaboration with Globe Telecom, a leading service provider in the Philippines, to modernize Globe's existing charging capabilities, speeding up time to market for new products and services. Under the agreement, Amdocs will deploy its real-time charging solution across Globe's multiple data centers and migrate the current charging system and subscribers to the new platform.
- January 2023: CTM, a leading telecom operator in Macau has commissioned Amdocs to modify its online charging and billing infrastructure to support 5G standards, enabling the operator to rapidly launch new 5G products with innovative price plans and bundling offers for prepaid and postpaid customers.

Product Name	Amdocs Customer Experience Suite
Description	 Amdocs offers a number of revenue management solutions and products within its overarching customer experience suite. Amdocs Monetization Suite addresses various facets of monetization. It provides 5G-proven online/offline convergent charging. It encompasses policy control - which is a key element for service definition and bridges any previous divisions between IT and network. It also includes catalog as it relates to monetization; partner management; billing including digital bill experience; invoicing; and essential touch points to wider Amdocs care and commerce assets; as well as a growing focus on 5G network exposure (especially, but not limited to, NEF) as a means to enable new revenue opportunities. It is a unified system covering various lines of business, including voice, data, broadband, value-added services, IP television, mobile virtual network operators, and 5G services. It is designed to handle 5G scenarios like network slicing, edge computing, IoT, and SLA-based charging. The suite is cloud-native and built on microservices, supporting a distributed architecture. To support the monetization of new network standards and add additional monetization capabilities across market segments, Amdocs launched Freestyle Billing - the new flexible monetization solution. The cloud-native billing solution embraces a new approach to billing, shifting it from a batch-based approach to an event-based approach giving CSPs flexibility. In addition, it is powered by a real-time billing engine combined with machine learning to enable personalized customer experiences that cater to the unique preferences of buyers

Product Overview

	 support any existing monetization models and easily configure any future monetization models without the involvement of IT cycles
	• facilitate the launch of innovative monetization models and value-add features like threshold billing, milestone-billing, usage-based billing, bill estimate, etc.
	all on a single platform. It allows seamless scalability and creates operational efficiencies while mitigating cost risks.
	Amdocs Monetization Suite also focuses on "taking charging to the edge" by enabling operators to deploy on any cloud environment. It offers the flexibility of pushing certain (e.g., charging) capabilities to the edge, as needed, for emerging enterprise as well as consumer requirements, making further use of distributable microservices. By adopting such an approach, the suite minimizes signaling backhaul and reduces hardware footprint, making it an efficient and effective solution.
	Amdocs Monetization Suite is part of a broad range of portfolio assets that also extends to Amdocs Commerce & Care Suite (C&CS), focusing on digital experience; and Amdocs Intelligent Networking Suite (INS), focusing on OSS and network. Specifically, C&CS focuses on omnichannel customer engagement, including commerce, order management, care, and configure-price-quote (CPQ) modules. The entire suite is cloud- native, open, and modular.
	Amdocs combines core software competencies with design and managed service resources in areas such as customer self-service, analytics-driven proactive care, real-time convergent charging, real-time billing, policy, and streamlining the introduction of new services with a unified framework across pricing, rating, and policy logic.
Components	 Amdocs Monetization Suite: Charging Policy Billing/Bill Experience Invoicing/Collection/Accounts Receivable Partner Management Network Exposure Function (NEF) Catalog Amdocs Commerce & Care Suite: Omnichannel Customer Management Commerce/Care Order Management/CPQ
Key Customers	 A1 Telekom (Austria) Airtel (India) Altice (US) AT&T (US) Bell Canada BT (UK) Charter (US)

	 KT (South Korea) Orange (France) Safaricom (Kenya) Sky UK Telefónica (Latin America) Verizon (US) Vodafone (Germany, Turkey)
Key Rivals	 Ericsson Huawei Netcracker Nokia Oracle Whale Cloud

Essential Analysis

Strengths

- Innovation Engine: Amdocs has started making concerted efforts to focus on internal innovation, as evidenced by the introduction of its Freestyle Billing offering in 2022. The company continues to invest in attracting and retaining software expertise to fuel 5G and cloud innovation.
- 5G Focus: Amdocs Monetization Suite provides proven online/offline convergent charging. It is a unified system covering various lines of business and is designed to handle 5G scenarios like network slicing, edge computing, IoT, and SLA-based charging. The suite is cloud-native and built on microservices, supporting a distributed architecture.
- TM Forum Open API Integration: Amdocs' integration with TM Forum's open APIs enhances its revenue management offerings by ensuring industry-standard interoperability and enabling efficient event processing and monetization services.

Limitations

- B2B Competition: Amdocs offers a number of B2Brelated capabilities within its revenue management portfolio, including predictive analysis and estimation tools. However, it faces much stiffer competition in B2B, where much of the industry's 5G revenue expectations reside.
- Down-Market Challenges: Amdocs is still commonly regarded as a vendor highly reliant on a small number of key customers for the majority of its revenue. However, new endeavors such as the Amdocs Digital Brands Suite are anticipated to play a pivotal role in broadening Amdocs' revenue sources and lessening its dependence on its most substantial clients.
- Internal Innovation: Amdocs' commitment to innovation through acquisitions is indeed commendable, but it should also consider strengthening its internal R&D efforts to foster a more enduring and controlled approach to generating value and sustaining its competitive edge. This balance between external acquisitions and internal innovation could be a key to longterm success.

Current Perspective

LEADER

Amdocs is a leader in the revenue management market. The company has done an effective job of organizing its end-to-end suite of customer and revenue management assets within C&CS and Amdocs Monetization Suite, underpinned by a long and developing focus on AI and data that enrich 5G functionality, for example the network data analytics function. Amdocs' packaging of policy, convergent charging, and real-time catalog solutions into an offering that serves the '5G value plane' represents a point of potential differentiation in a market, which is now replete with a host of vendors calling out its 5G monetization credentials.

Amdocs continues to focus on the cloud-native approach, underpinning its entire CES23 portfolio. The Amdocs AI & Data Platform spans the entire CES suite, enabling CSPs to leverage AI-driven use cases. This cloud-native platform efficiently collects, organizes, manages, and delivers business-ready data from various sources, catering to data lakes and data warehouses at scale. Supported by the Amdocs Logical Data Model (aLDM), this solution consolidates and enriches revenue-related data, ensuring seamless integration with operational and analytical systems as well as the broader ecosystem. This contextual and accessible data benefits different stakeholders for various purposes, including reporting, API layer, AI/ML and more. Moreover, the platform offers an expanding library of out-of-the-box AI use cases, maximizing data utilization across care, commerce, billing, and network domains. Amdocs has also introduced amAIz, a generative AI (GenAI) framework, to the market, which provides CSPs with enterprise-grade GenAI use cases and capabilities. It has also started leveraging emerging GenAI technology in internal R&D automation and processes as well as in its own product. In the bill experience domain, GenAI is utilized to generate personalized content when engaging with users.

The company has also taken recent notable steps to introduce innovation for operators. This includes the introduction of Amdocs Digital Brands Suite as a Service that utilizes AWS' public cloud. The incorporation of real-time billing engines into innovative monetization solutions like Amdocs Freestyle Billing and Amdocs Bill Experience within Amdocs' portfolio reflects a profound shift toward immediacy and responsiveness. In an era where speed and convenience are paramount, real-time billing reduces delays in revenue collection, improving cash flow for businesses and enhancing the customer experience. The event-based approach, which is the core of Amdocs Real-time Billing, gives CSPs total flexibility to support any monetization models today and in the future. It also allows them to offer complete freedom of choice to their customers. This perspective aligns with the modern expectation of seamless, instant transactions, ultimately fostering stronger customer relationships.

Competitive Recommendations

Provider

Align 5G 'Value Plane' with Evolving Capabilities: Amdocs' introduction of the 5G 'Value Plane' concept represents a nuanced approach to the market and one that plays to Amdocs' platforms and skillsets. With major enhancements in areas like AI enabling even more sophisticated use cases in upcoming 5G standards releases, Amdocs should look to identify and demonstrate use cases that can utilize these emerging capabilities to generate incremental 5G revenue.

- **Diversify:** Amdocs continues to rely on a handful of CSPs, primarily in North America, for the bulk of its revenue; the company generates nearly two-thirds of its total business from just 10 customers. The company's Digital Brands Suite as a Service represents a focus on incremental opportunities by packaging revenue management products and offering them as a service to minimize upfront costs and speed time to market. Meanwhile, Amdocs Bill Experience, offered in a SaaS model, is geared toward addressing the requirements of a diverse set of use cases and potential customers.
- Leverage Media Expertise: Amdocs' extensive relationships with content and media solutions providers represent a differentiator. The company should consider how best to package its content assets to help network operators monetize video content through joint solutions with content providers.
- **Embracing GenAI:** Amdocs telco GenAI framework amAIz, along with its strategic partnership with Microsoft, has created a foundation for CSPs to benefit from the immense potential of GenAI.

Competitors

- **Geographic Flexibility:** While Amdocs continues to expand its penetration of smaller operators, competitors may point to lack of substantial revenues from emerging markets as evidence that Amdocs' approach is not yet resonating in all regions.
- **Continued Focus of Select Few Operators:** Though Amdocs is trying to penetrate into smaller Tier-2 and Tier-3 operators, competitors still highlight its dependency on select few operators for the majority of its revenues.
- Vertical Expertise Uncertainties: Competitors with established vertical billing systems experience (e.g., Nokia, Oracle, and Netcracker) can highlight Amdocs' relatively limited focus on non-CSP vertical markets.

Buyers

- **Digital Brands:** Operators should work with Amdocs to identify the best use cases for the public cloudbased, 'as-a-service' model envisioned by its Digital Brands Suite as a Service. This concept could serve as a low-risk way to test the 'as-a-service' model and determine if or when it makes sense to adopt it more broadly in revenue management or customer service applications.
- **Quantify 5G Monetization:** Operators should press Amdocs to provide more real-life details on how Amdocs' portfolio is driving true revenue growth from 5G, both in consumer and B2B use cases.
- **Explore Ad and Media Tie-Ins:** Operators should encourage Amdocs to bring specialized advertising and media products to the table to augment its core service billing solution. Most rivals lack these capabilities.

Metrics

Portfolio Capabilities

Rating:	Leader
Mediation:	Amdocs Mediation converts network data into business information by collecting and processing multi-source, raw network data and distributing the information in real-time or batch mode. Amdocs Network Data Fabric (ANDF) is a real-time stream processing platform that is designed to ingest data from any source and transform it to a common format for real-time processing and distribution to downstream applications. In addition to mediation and billing, ANDF enables business applications dependent on real-time capture and processing of events, including monetization as well as audit and control (e.g., supporting revenue assurance, fraud assurance, quality of experience, quality of service, and customer experience management).
Converged Rating & Charging/5G Charging Function Support:	Amdocs Monetization Suite provides online/offline convergent charging. It is a unified system covering various lines of business, including voice, data, broadband, value-added services, IP television, mobile virtual network operators, and 5G services. It is designed to handle 5G scenarios like network slicing, edge computing, IoT, and SLA-based charging. The suite is cloud-native and built on microservices, supporting a distributed architecture. Additionally, it offers the flexibility of pushing certain capabilities to the edge, as needed, for emerging enterprise as well as consumer requirements, making further use of distributable microservices. By adopting such an approach, the suite minimizes signaling backhaul and reduces hardware footprint, making it an efficient and effective solution.
Online Charging System (OCS):	Amdocs Monetization Suite integrates the OCS function into the 5G CCS, enhancing it with cloud-native and multicloud features that enable seamless online/real-time capabilities - especially relevant for emerging large scale, automated and time-dependent requirements.
Customer Billing Management:	 Amdocs Freestyle Billing, part of Amdocs Monetization Suite, offers ways to maximize customer value. By transitioning from batch billing to an event-based model, it calculates charges in real-time. Amdocs Freestyle Billing represents the next generation of billing software, supporting multiple billing models within a single biller. This helps CSPs and their customers with complete control over bill structures, allowing for various preferences, such as bill frequency, services on each bill, monetization models, and more. Amdocs Digital Brands Suite as a Service is a comprehensive digital BSS solution offered in a SaaS model deployed on the AWS cloud as a multi-tenant product.

Partner Billing Management:	Amdocs Subscription Marketplace includes a 'Partner Ecosystem Management' module, a comprehensive solution for efficiently managing, settling and monetizing partnerships throughout their entire lifecycle. With streamlined zero-touch onboarding, automated workflows and simplified product authoring, the module accelerates and simplifies partnership operations, enabling CSPs to seamlessly collaborate and co-create multi-partner solutions, and integrate them into their own commerce catalogs. This collaborative approach facilitates business relationships, while offering an extensive network of partners with a diverse array of complementary services.
Collections Management:	Amdocs Collection enhances revenue assurance by implementing manageable collection processes to prevent and detect revenue leakage. Amdocs Digital Brands Suite as a Service is a comprehensive digital BSS solution offered in a SaaS model, deployed on AWS cloud as a multi-tenant product. It covers various aspects, including care, commerce, ordering, and monetization. As part of its monetization services, the suite supports several BSS revenue management functionalities, such as invoicing, bill adjustments (disputes), payments/AR, journaling and collections.
Bill Presentment:	By offering behavior science-based design-led bills, Amdocs Bill Experience (formerly BriteBill) elevates a typically mundane document into an opportunity for enhanced user engagement. This transformation allows CSPs to deliver exceptional billing experiences to their customers across various touchpoints, including paper, digital and email, reduce the volume and the duration of the calls to care, and create upsell and cross-sell opportunities with enhanced customer engagement. With the introduction of the SaaS Bill Experience (Amdocs Bill Experience sold 'as- a-service'), CSPs can now leverage in generating clear and understandable digital bills. These bills are translated into pre-defined bill templates, which can be seamlessly configured to match any CSP brand, utilizing the user-friendly 'bill designer' configuration tool.
Voucher Management/Loyalty Plan Management:	Amdocs Monetization Suite offers robust support for voucher management (promo codes) and loyalty plan management. Additionally, Amdocs Digital Brands Suite as a Service is a comprehensive, pre- integrated digital BSS solution provided in a SaaS model as a multi-tenant product, deployed on AWS cloud, and including care, commerce, ordering and monetization functionalities. It extends its capabilities to encompass voucher management and loyalty plan management through third-party integration with providers like Evolving Systems and Perx.
Analytics Integration:	Amdocs provide a full solution for AI and data, encompassing a set of products, technologies, and services. The Amdocs AI & Data Platform spans the entire CES suite, enabling CSPs to leverage AI-driven use cases. This cloud-native platform collects, organizes, manages, and delivers business-ready data from various sources, catering to data lakes and data warehouses at scale. Supported by aLDM, the solution consolidates and enriches revenue-related data, ensuring seamless integration with operational and analytical systems, as well as the broader ecosystem. This contextual and accessible data benefits different stakeholders for various purposes, including reporting, API layer, AI/ML and more.

Policy Control and Charging:	Amdocs Policy is often considered as the "brain" that manages and controls essential service characteristics of the 5G network. It is a well-proven, network convergent and cloud-native policy controller for defining and controlling device and service characteristics - being deployed for 5G standalone and allowing effective service definition, differentiation, and monetization. Amdocs places particular emphasis on its openness, usability, flexibility, ease of deployment and use, and extreme dynamic scalability. Amdocs Policy Controller enables CSPs to control, manage and monetize the enhanced characteristics of the 5G network, as well as open up new markets. It is cloud-based and backwards-compatible with 4G and 3G as well as fixed-line. In addition, with the solution's rich set of 5G capabilities, it enables CSPs to support differentiated quality of service for upcoming services. Amdocs provides a particular strength of focus for service providers seeking combined policy and charging control (PCC) capabilities and synergies from shared microservices across both capabilities - such as offer management and profile management. PCC provides operators with the ability to further bridge any remaining organizational as well as technical divisions between network and IT.
Enterprise Monetization Solutions:	Amdocs Monetization Suite is its flagship cloud-native solution for monetizing 5G services, IoT and smart spaces, the digital ecosystem, and the subscription economy. The Amdocs 5G Value Plane concept supports new business models such as NaaS, PEN (in various iterations) and B2B2X. Amdocs Bill Experience: Enterprise customers' digital bills include a breakdown of organization hierarchies, comparisons to previous bills and predictions of future bills. Corporate Analyzer provides bill analytics capabilities to break down charges for departments, charge types and monthly views. Amdocs NEF helps CSPs expose 5G network attributes via APIs to potential enterprise customers and software developers.

Delivery Model

Rating:	Leader
Managed Services Approach:	Primarily, Amdocs' solutions are based on a managed services operating model. Based on customer needs, these could include (but are not limited to) fixed price managed services, managed transformation, 'as-a-service,' revenue share, or 'pay-as-you-grow' model. Additionally, it provides a fixed capacity model or per- demand variable rate card for relevant services such as application development. In 2022, it achieved a record year for managed services in terms of revenue. Its managed services agreements accounted for approximately 61% of Amdocs' total revenue for the financial year, also marking a record high.

'As-a-Service' Models:	Amdocs Monetization Suite is its flagship cloud-native solution for monetizing 5G services, IoT and smart spaces, the digital ecosystem, and the subscription economy. While all products within the suite are cloud-native and support any cloud configuration, it is gradually converting selected products to be available in a 'as-a-service' model, based on market demands. In addition, Amdocs Digital Brands Suite as a Service is a fully pre-integrated digital BSS provided as a SaaS model-based a multi-tenant product deployed on AWS cloud, covering care, commerce, ordering, product catalog and monetization services.
Hybrid/Multicloud Consumption Models:	Amdocs products are all cloud-native, cloud-agnostic, and supported on public, private, hybrid and multiple-cloud environments.
Availability/Experience on Hyperscale Platforms:	To support its customer base who work with all the major public cloud providers, Amdocs has established strategic relationships with the hyperscalers, certified its products on their platforms, accumulated product and employee certifications. Amdocs is a Solution Partner with Microsoft Azure for data and AI, infrastructure, and digital and app innovation. It is also a partner with Microsoft for Microsoft's Operator Nexus. Amdocs is an AWS Premier partner, with over 2000 AWS certifications and five AWS competencies (managed services, DevOps, migration, IoT ISV, and FSI). Its BSS-OSS and media portfolio is certified on AWS and has five AWS service validations.
Engagement Structures:	Amdocs Monetization Suite, as part of Amdocs CES, is built on the foundation of Amdocs' cloud-agnostic Amdocs Microservices Management Platform, offering a CI/CD environment to ensure agility and IT velocity.
Average Delivery Cycle Length (on most recent version of BSS platform):	Delivery length depends heavily on project scope and specifications. Its open and modular suite of solutions enables it to roll out projects in a phased manner in accordance with customer specifications. It has also modified its overall approach to reduce deployment time - including launching several products as-a-service model (e.g., SaaS Bill Experience), leveraging the expertise of on-premises solutions to create easy-to-use, customizable templates and making them available on the Amdocs SaaS management platform, thereby eliminating the lead time for on-premises deployment. In addition, Amdocs Freestyle Billing is microservices-based with open APIs, enabling customers to deploy only the modules they currently need to match their budget and timelines.
Delivery Features:	Leveraging automation of processes and AI, it ensures continual delivery through DevOps and cloud-native modular, microservice-based releases across multiple BSS business domains using Amdocs Microservices Platform. Meanwhile, Amdocs Intelligent Operations Center serves as a cross-ops monitoring and governance platform that incorporates best practices from various accounts, BizOps team and tools, business, and IT monitoring and reporting. In addition, Amdocs Digital Brands SaaS suite is designed with fully automated DevOps and CI/CD, providing 'one-click deployment' for the entire stack.



Partners:	Its strategic partnerships include those with AWS, Google Cloud, Microsoft Azure, and Red Hat.
	Amdocs Digital Brands Suite as a Service is a pre-integrated digital BSS provided in a SaaS model as a multi-tenant product deployed on AWS. It has partnered with Creatio for CSR management, Stripe as payment gateway provider, CommBox for chatbot, LightiCo for document management, Sinch for OCS, PerX for Campaign Management, Onfido for KYC, Avalara and Vertex for taxation.
	Amdocs Subscription Marketplace comes pre-integrated with partners in the platform include Tier-1 OTTs such as Netflix, Disney, Discovery+, Paramount+, Peacock, and subscription services such as Google Cloud and Apple Business Essentials.

Service and Support

Rating:	Leader
Workforce:	It has 31,000 employees across 90 countries worldwide, which are dedicated to accelerating CSPs' migration to the cloud, enabling differentiation in the 5G era, digitalizing and automating their operations and providing end users with exceptional next-generation communication and media experiences, creating a seamless digital world.
Delivery Centers:	Development and operations centers in Brazil, Canada, Cyprus, India, Ireland, Israel, Mexico, the Philippines, the UK, and the US. Business process operations center in India.
Research and Development:	 Its research and development investment during 2022 reached \$354.7 million, reflecting a YoY increase of 13% and representing 8% of total revenue during the same period. Its R&D organization expanded throughout FY2022-2023 to meet the demands of new customers and accelerate the roadmap for both Amdocs Freestyle Billing and the Amdocs 5G Control and Value Plane. In FY2024, it introduced the use of GenAI into its R&D methodology to further enhance efficiency and innovation.

Customer Success and Stability

Rating:	Leader
Momentum:	Through Amdocs' relationships with over 600 content creators and 400 communications and media providers across 90 countries, Amdocs serve billions of consumers worldwide.

Corp Stability:	FY2022 was a record year for the company, achieving highest-ever annual revenue of \$4.58 billion. It maintained this momentum in 2023, with quarterly revenues of \$1.19 billion in Q1 and \$1.22 billion in Q2, surpassing midpoint guidance and showing an 8.2% YoY increase in constant currency. It also achieved record revenues in North America (up 7.4%) and Europe (up 16.6%).
SP Customers (# of SPs, # of customers served, key reference accounts):	Amdocs is a leading provider of software and services for approximately 400 communications, Pay TV, entertainment, media industry and other service providers in developed countries and emerging markets. Its customers include some of the largest telecommunications companies globally, such as América Móvil, AT&T, Bell Canada, Singtel, Telefónica, Telstra, T-Mobile, Verizon, and Vodafone. Additionally, it serves cable and satellite providers like Altice USA, Charter, Comcast, Dish, J:COM, Rogers Communications and Sky, along with small to mid-sized communications businesses, mobile virtual network enablers/mobile virtual network operators, directory publishers, and providers of media and financial services. It also maintains relationships with hundreds of content owners and distributors worldwide, including MGM and Warner Bros. Discovery.
Customer split (Mobile/ fixed/ converged/ cable- MSO/ MVNO/ satellite/ enterprise):	Amdocs revenue management solutions cover all range of customers with many cases of addressing multiple lines of business.

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