ON-PREMISE TO CLOUD MIGRATION FOR SPORTSBOOKS EXPLAINED:

FROM A TO Z

Part 1

"Cloud is not just a technology. It's the backbone, a foundation. It's the foundation for the entire betting business. When we talk about the sports betting market, a betting platform has to deliver reliability at split-second speeds and remain fully compliant with each state's regulatory environment. In the US, servers and their users must physically stay within the state where the transaction originated. While providers need to build a series of proprietary data centers looking for ways to not only scale but also to build the same thing again, at pace, in several other states at the same time.

Cloud is the answer. Cloud migration helps build capacity simultaneously in multiple states, removing the need to set up hardware or patch software and considerably reducing lead time. Cloud computing also enhances data security and provides high elastic infrastructure. Cloud scales easily when volumes of new users could potentially initiate a performance hit, especially during major sporting events. If you lose your bettors and their confidence, your competitors are right here to poach them instantly."

Russell Karp • SVP of Media and Entertainment at DataArt

As a trusted cloud partner with a team of certified architects, developers, data specialists, security experts, and account managers, DataArt has empowered numerous clients to implement cloud solutions that accelerate digital transformation and modernization.

For organizations aiming to enhance resiliency, scalability, and operational efficiency while reducing costs, the cloud consistently emerges as the top choice.

The main benefit of cloud migration is the opportunity to rationalize systems, applications, databases, and data sources, and move onto more modern hardware, firmware, and middleware. Cloud migration also enhances the developer experience by leveraging cloud-native services and reducing or eliminating tech debt. This transition not only simplifies system management but also fosters innovation by enabling faster deployments and streamlined workflows.

Since cloud migration provides organizations an opportunity to holistically analyze their technology stack and business processes, eliminates data redundancy, improves data quality, and enhances overall data management and reliability. Additionally, cloud migration allows for the rapid rollout of new services, enabling businesses to stay agile and responsive to market demands.

By leveraging cloud services, more accurate data will expedite updates and enhancements to your product, quickly identifying and resolving issues. This approach makes business operations easier and more cost-effective to deliver and support, as well as being more accurate, timely, and secure.

aws **Advanced** Consulting Partner

Microsoft Partner | Gold Cloud Platform
Microsoft

Google Cloud
Premier Partner

"Many managers and executives are up to the reality that, if they're not relying on cloud to a sufficient degree, they simply don't have enough flexibility to respond to threats like competition and global pandemics. Threats and opportunities are ultimately the same thing, and that is change. The cloud is about flexibility, and one of the facets of flexibility is resilience, and resiliency is a very big theme these days. So, the ability to procure anything from anywhere, at any place, anytime, in any way that you want, is cloud taken to the limit. Anything IT, I should say."

Peter Vaihansky • SVP, Global AWS Partnership Lead at DataArt

Why Should You Migrate to Cloud?

ON-PREMISES

9%
Software Licenses

Customization & Implementation

Hardware

IT Personnel

Maintenance

Training

CLOUD COMPUTING

68%
Subscription Fee

Implementation, Customization & Training

Ongoing Costs

- Apply fixes, patches, upgrade
- Downtime
- Performance tuning
- Rewrite customizations
- Rewrite integrations
- Upgrade dependent applications
- Ongoing burden on IT
- Maintain/upgrade hardware
- Maintain/upgrade network
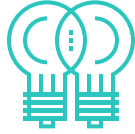- Maintain/upgrade security
- Maintain/upgrade database

Ongoing Costs

- Subscription fee

Business Benefits

New betting markets and gambling

Better opportunities for innovation

Constant access to data

State-specific compliance with local laws and regulations

Increased collaboration

Cost optimization

Enhanced security

Mobility

Technical Benefits

High elastic infrastructure

Streamlined development of new features

Automatic software updates

Enhanced performance

Disaster assistance

Autonomy for developers

The Cloud Migration Process

Step 1 | Align business and cloud strategy

Determine your cloud deployment path | **Step 2**

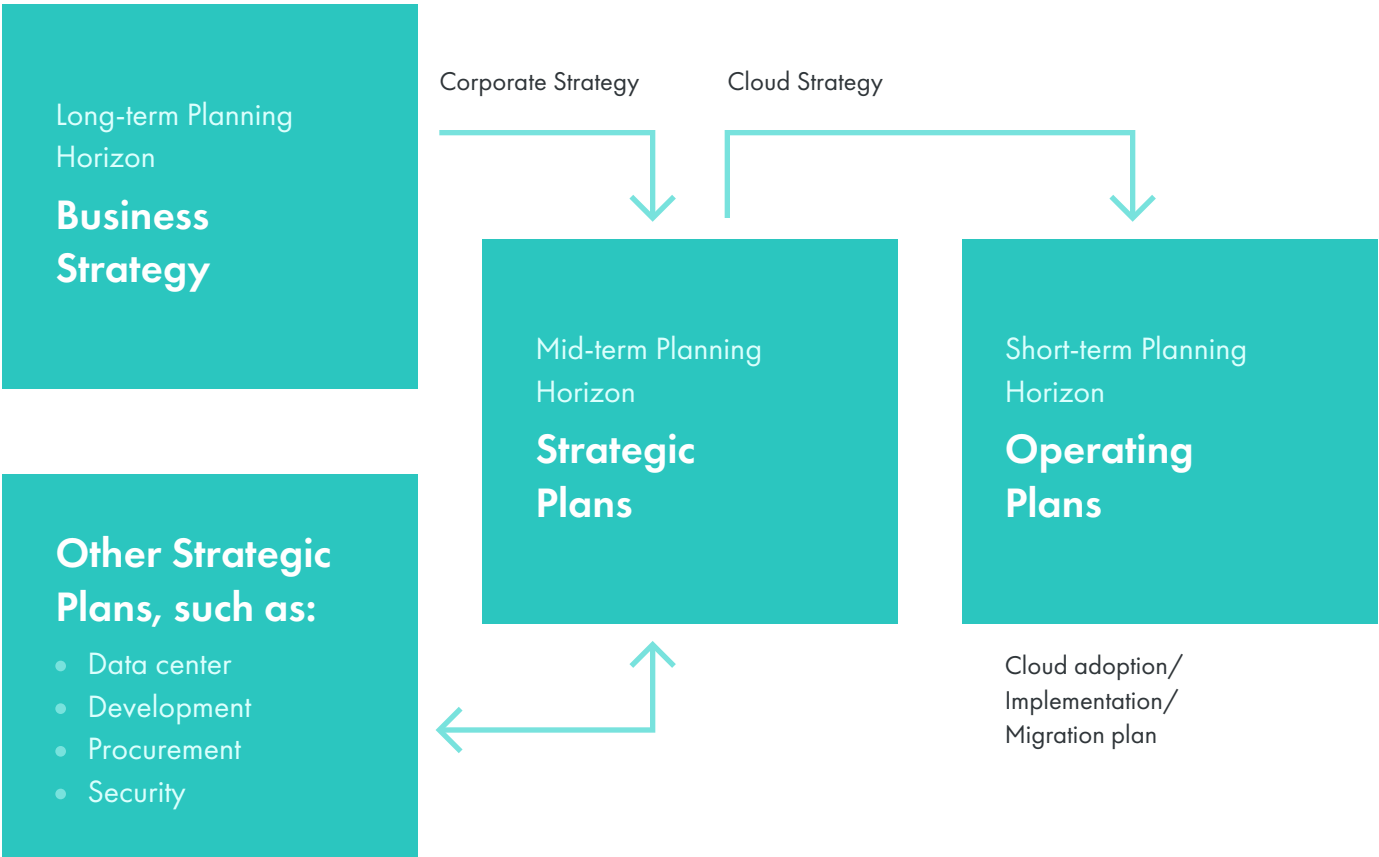**Step 3** | Select your service model

Define KPIs | **Step 4**

Step 5 | Move to the cloud

#1 Cloud Migration Strategy

	Strategy Type	Duration	Description
Level 1	Long-term business strategy	Five years or longer	This level is expressed in terms of business goals, business transformation, and business outcomes.
Level 2	Mid-term strategic plans	Two to five years	This is where cloud strategy fits, as well as data center strategy and security strategy.
Level 3	Short-term operating plans	One to two years	At this stage, you start cloud migration and implementation activities.

Cloud Strategy in Context

Long-term Planning Horizon

Business Strategy

Corporate Strategy

Cloud Strategy

Other Strategic Plans, such as:
- Data center
- Development
- Procurement
- Security

Mid-term Planning Horizon

Strategic Plans

Short-term Planning Horizon

Operating Plans

Cloud adoption/ Implementation/ Migration plan

What Is the Current State of Cloud Adoption?

Build
- Gather your cloud team

Audit
- Architecture
- Infrastructure
- Applications
- Data

Consult
- IaaS/PaaS
- Tech stack
- People/skills
- Priorities
- Dependencies
- Milestones

Plan
- Define scope
- Determine acceptance criteria
- Build backlog
- Plan iterations and checkpoints

Cloud Migration Team

C-level leadership should appoint a "single-threaded leader" to oversee the migration effort, ensuring alignment with business objectives and maintaining accountability across departments.

Role	Description
Project Manager	Is responsible for planning, overseeing, and leading projects from ideation through to completion
Business Analysts	Conducts research and analysis in order to come up with solutions to business problems and help introduce these systems to businesses and their clients
Solution Architect	Is responsible for designing the cloud architecture – platforms, servers, storage, content delivery, and networks.
Data Architect	Manages data migration design, structure, and integration, ensuring data consistency and optimal organization within the cloud.
Software Developer	Develops and deploys solutions on cloud platforms.
Quality Assurance (QA)	Tests software to detect bugs and errors. Checks whether a product complies with the requirements.

#2 Overview of Cloud Deployment Models

	Private	Public	Hybrid
Description	It is a type of cloud computing that is used exclusively by one business or organization	It is the most popular model where you buy a "server slice" in a cloud computing environment that is shared with other clients	It combines a public cloud with a private cloud. It ensures that two platforms interact seamlessly with data
Advantages	• Bespoke and flexible development • High scalability • High security, privacy, and reliability	• Hassle-free infrastructure management • High scalability • Reduced costs • 24/7 uptime • Agile for innovation • Reduced complexity	• High scalability • High security, privacy, and reliability • Policy-driven deployment
Disadvantages	• Considerable expense on hardware, software and staff training • Minimal mobile access	• Minimal technical control • Decreased security	• Potential for high TCO • Added complexity • Strong compatibility and integration are required

Cloud Migration Categories

	Description	Drivers	Technologies	Development Approach
Retain	Keep specific applications on-premises	Avoid unnecessary migration costs	Legacy infrastructure	Traditional
Retire	Decommission outdated systems	Reduce operational costs	-	-
Repurchase	Move to a SaaS solution	Simplify maintenance and leverage cloud capabilities	SaaS	-
Rehost	Lift & shift	Reduce CapEx, quick cloud ROI	IaaS	Traditional/ Incremental
Refactor	Optimize code for the cloud	Faster updates, improved efficiency, code portability	Containers, PaaS	Lean/Incremental
Rearchitect	Redesign application for cloud scale	Improve agility, adopt new cloud capabilities	Microservices, PaaS, Serverless	Agile/DevOps
Rebuild	Redevelop applications entirely	Leverage cloud-native capabilities, modernize the stack	Cloud-native stacks, Serverless	Agile/DevOps

#3 Types of Cloud Computing Services

Type	Description	Example
IaaS Infrastructure as a Service	Infrastructure as a service offers essential computing resources — physical or virtual servers, operating system software, storage, networking infrastructure, data center space — on demand, on a pay-as-you-go basis	• Microsoft Azure • Amazon Web Services (AWS) • Cisco Metacloud • GCP
PaaS Platform as a Service	Platform as a service is a model where a third-party provider delivers hardware and software tools for developing, running, and managing applications to users over the internet.	• AWS Elastic Beanstalk • Google App Engine • Snowflake
FaaS Function as a Service	Function as a service is a type of serverless computing that enables cloud customers to develop applications and deploy functionalities and only be charged when the functionality executes.	• Amazon Lambda • Google Cloud Functions • Microsoft Azure Functions • IBM Cloud Functions
DBaaS Database as a Service	Provides managed database services, enabling quick access to scalable databases without the need for physical hardware or extensive maintenance.	• Amazon RDS • Google Cloud SQL • Microsoft Azure SQL Database
SaaS Software as a Service	Delivers fully functional applications over the internet, managed by the provider, with users simply accessing the software via a web interface.	• Amazon Lambda • Google Cloud Functions • Microsoft Azure Functions • IBM Cloud Functions

On-Premises	IaaS	PaaS	FaaS	DBaaS	SaaS
Functions	Functions	Functions	Functions	Functions	Functions
Application	Application	Application	Application	Application	Application
Runtime	Runtime	Runtime	Runtime	Runtime	Runtime
Containers	Containers	Containers	Containers	Containers	Containers
Operating System	Operating System	Operating System	Operating System	Operating System	Operating System
Hardware	Hardware	Hardware	Hardware	Hardware	Hardware

■ Managed by you   ■ Managed by the platform provider

Review of the Top Cloud Providers

Details	AWS	Azure	Google Cloud Platform
Coverage	108 availability zones within 34 geographic regions **Local Coverage:** AWS Outposts	Presence in 60+ regions across the world **Local Coverage:** Azure Stack	Presence in 40 regions and 121 zones. Available in 200+ countries and territories **Local Coverage:** Google Anthos
Years on the market	18 (2006)	14 (2010)	16 (2008)
Strengths	• Dominant market position • Extensive, mature offerings • Support for large organizations • Global reach • Flexibility and a wider range of services	• Second largest provider • Integration with Microsoft tools and software • Broad feature set • Hybrid cloud • Support for open source	• Commitment to open source and portability • Flexible contracts • DevOps expertise • Complete container-based model • Cost-efficient
Compliance	140+ compliance offerings	100+ compliance offerings	100+ compliance offerings
Pricing	Charges per hour/minute	Charges per minute	Charges per minute
Clients	FanDuel Fanatics Betsson Group Kambi Simplebet Sportradar Sportbet NASCAR Formula 1 Ferrari NHL NFL PGA Tour	NBA Novibet Fujifilm BMW Renault Sport Formula One Team viaSport	PMY Group LeoVegas Group AB FOX Sports Sirplay MLB Staige

#4 Establishing Cloud KPIs

Key performance indicators (KPIs) are any metrics that you gather to assess how your in-progress migration is doing against your expectations. KPIs help detect visible or invisible problems that may be obstructing migration.

Category	Sample KPI
User experience	Page load time, Lag, Response time, Session duration
Application/component performance	Error rates, Throughput, Availability
Infrastructure	CPU usage %, Disk performance, Memory usage, Network throughput
Business engagement	Number of odds made, Conversions and conversion percentage (%), Engagement rates

#5 Moving to the Cloud

1 Designing the optimal cloud infrastructure

2 Compelling a pilot project in parallel with the legacy processes to test the system

3 Improving infrastructure based on the pilot project feedback and outcomes

4 Moving the system components to the cloud

5 Configuring the CI/CD pipelines, cloud monitoring, logging, and alerting solutions

6 Implementing governance and security protocols

Part 2

Challenges of Migrating to the Cloud

Through 2024, 80% of companies unaware of common cloud adoption mistakes will overspend by 20% to 50% on cloud services.

Cloud Adoption Do's and Dont's

| CLOUD ADOPTION DONT'S		CLOUD ADOPTION DO'S
Don't limit yourself to a single cloud project	→	Think about cloud holistically, start adopting it with your future potential needs in mind
Don't neglect well-architected frameworks	→	Consider, implement, and align with well-architected practices from day one and as cloud adoption progresses
Don't re-create your on-prem setup in the cloud	→	Try exclusive capabilities and technologies cloud has to outperform on-prem setups
Don't carry an on-prem mindset to the cloud	→	Abandon your "pet" attitude to resources, and adopt a true cloud-oriented "cattle" mindset
Don't neglect disaster recovery for cloud infrastructure	→	Implement at least a basic DR strategy and test it — for the sake of business continuity
Don't let stakeholders dally with their role in cloud adoption	→	Align cloud adoption goals and priorities and stick to a company-wide strategy
Don't let cloud automation be an after-thought	→	Design and plan for automation from the very beginning of your cloud journey

$2.8 billion*

Revenue in million U.S. Dollars

3,000

2,500

2,000

1,500

1,000

500
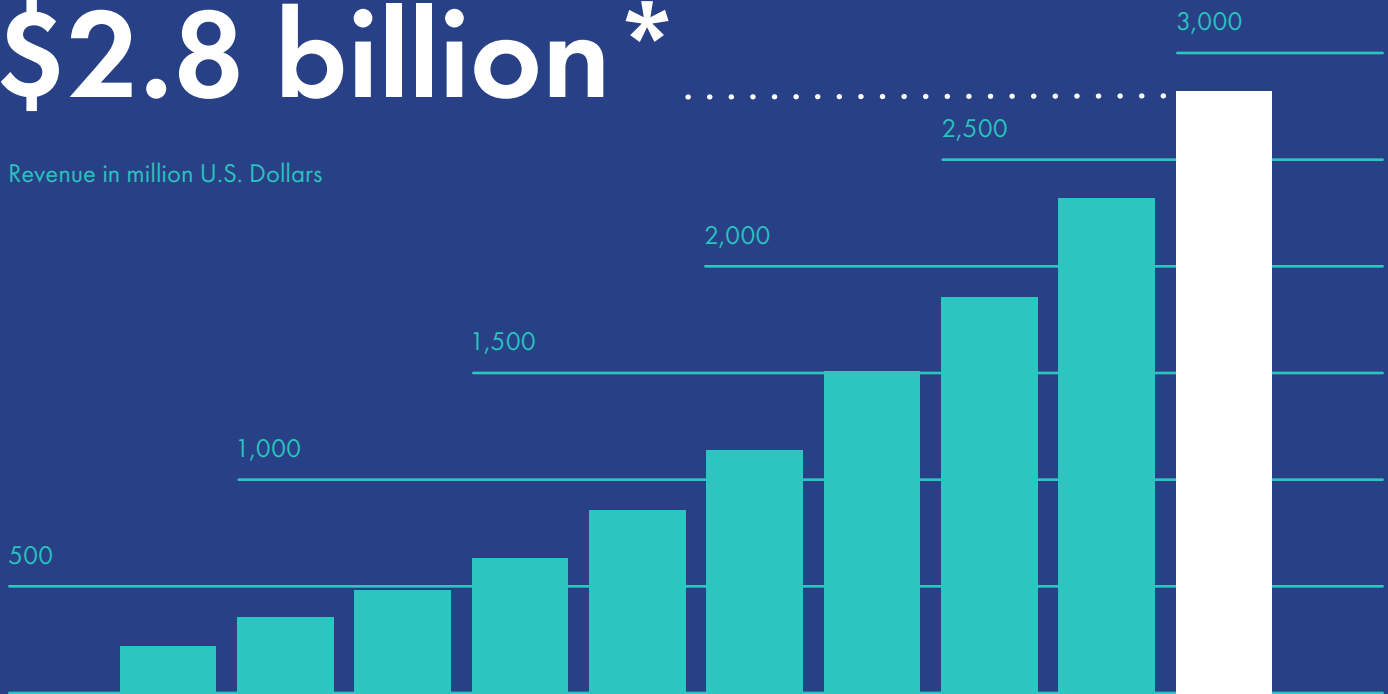
*Projected US Cloud Security Market Revenue by 2029

CHALLENGE #1

Security Threats

SOLUTION

- Implement encryption to protect data at rest and in transit
- Conduct regular auditing of user activity to detect suspicious behavior
- Schedule code audits to identify and address vulnerabilities
- Use cloud backups to ensure data recovery in case of an incident
- Provide employee training to increase awareness of security best practices
- Enable multifactor authentication (MFA) to add an extra layer of protection
- Implement data classification to organize and protect sensitive information
- Isolate individual workloads to minimize potential damage in the event of a breach

CHALLENGE #2

Uncertain Migration Financial Costs

SOLUTION

- Create a well-laid migration plan
- Optimize your cloud costs with the best DevOps practices
- Assess which resources are being used and eliminate unnecessary ones.
- Take advantage of autoscaling
- Move infrequently accessed storage to cheaper tiers
- Set alerts for crossing predetermined spending thresholds
- Leverage spot instances
- Implement mandatory tagging to track and manage resource usage
- Invest in Savings Plans for greater flexibility and cost efficiency

CHALLENGE #3

Incompatibility of the Existing Architecture

SOLUTION

- Conduct a root cause analysis
- Resolve tech debt
- Phase cloud migration
- Figure out interdependent parts
- Create profound documentation
- Adopt microservices architecture
- Apply infrastructure as code (IaC) approach

CHALLENGE #4

Data Loss

SOLUTION

- Use multiple regions within the chosen cloud provider to store data, ensuring redundancy
- Configure backup processes for migrated data
- Migrate data in increments to minimize potential loss during the transition
- Implement managed file transfer solutions for secure data migration

CHALLENGE #5

Business Downtime

SOLUTION

- Configure live migration
- Design your cloud infrastructure with high availability and disaster recovery in mind
- Spread your services across multiple availability zones and regions
- Choose the right partner and the right plan, e.g., 24/7 support and SLAs with guaranteed uptime and back-ups
- Make sure your disaster recovery is aligned with business objectives

CHALLENGE #6

Vendor Lock-In

SOLUTION

- Design your application to be portable and aligned with open-source standards
- Maximize portability of your data: avoid proprietary formatting, standardize the documentation, categorization, and indexing of data
- Implement DevOps tools and processes
- Consider Data Gravity — as more data accumulates in one cloud environment, it can be challenging and costly to move. Plan data architecture carefully to avoid being locked into a single provider due to data volume and interdependencies

CHALLENGE #7

Company-Wide Cloud Adoption Resistance

SOLUTION

- Make sure your leadership actively drives the migration, fully understanding the business needs and objectives
- Have leadership communicate the business case to the organization
- Invest in expert training and resources

CHALLENGE #8

Internal Cloud Skills Shortage

SOLUTION

- Develop cloud skills internally
- Build a culture of continuous learning
- Align training with business goals
- Make training relevant to each employee's role
- Partner with a reliable technical expert for cloud migration

DataArt Is a Reliable Technical Partner

As a trusted partner of leading cloud providers, DataArt brings extensive experience in cloud innovation and business transformation. Leverage our expertise to evaluate your on-premises infrastructure before migrating to the cloud, or to uncover underutilized resources that may be limiting the performance of your cloud solutions.

Reach a Faster Time to Market with Our Leading Cloud Partnerships

Google Cloud

DataArt is a Google Cloud Premier Partner

Amazon Web Services

DataArt is an Advanced Consulting Partner in Amazon Partner Network (APN)

Microsoft

DataArt is a Microsoft Solutions and Azure Consulting Partner.

Salesforce

DataArt is a Salesforce Consulting Partner

Why Partner with DataArt for Cloud Application Development Services?

60+
Azure Certifications

210+
AWS Professional Certifications

250+
Salesforce Certifications

50+
GCP Certified Experts and Professionals

550+
Total Cloud-Based Certifications

Sports Betting Expertise

DataArt works with leading organizations in sports and iGaming to modernize their architecture, build out robust products, and effortlessly extend into new markets while maintaining security compliance.

Sports Betting Software

Custom Integrations

Player and Team Analytics

Next-Generation Sponsorship

Fan Engagement

OUR EXPERTISE

- Platforms
- Virtual Reality
- Remote Gaming Servers
- Integrations

- Game Development
- Machine Learning
- Game Migration
- Cryptocurrency

- Data Visualization
- Artificial Inteligence
- Compliance

Development Services for All Players in the Sports Betting Market

Online Betting Companies

Sports Data Providers

Casinos

Affiliate Businesses

Tribal Casinos

Retailers

Cloud Migration Success Story

#1: Infrastructure Localization & Migration for US Sportsbook

Solutions provided:

- Deploying state-specific compliant solutions of a sportsbook platform with 100+ components

- Migrating the core capabilities of a sportsbook platform to data centers in 10+ states

- Implementing Infrastructure as Code approach

- Setting up continuous integration, continuous delivery and deployment

Results:

Thanks to the streamlined workflow and massive automation, the onboarding time for the new data center is now only two days.

#2: Large-Scale Cloud Migration Acceleration Program for Leading Sports Betting Provider

Solutions provided:

- Implementing a comprehensive cloud migration strategy through multiple Migration Acceleration Programs (MAP)

- Rehosting applications, migrating from 2 on-premise data centers to the cloud with minimal modifications

- Migrating approximately 500TB of data and consolidating over 2,600 repositories and pipelines to a cloud-based code management platform

- Launching a global network with 5,000+ firewall rules for secure environment segregation

Results:

Thanks to the streamlined workflow and massive automation, the onboarding time for the new data center is now only two days.

Why Clients Choose Us

1997
**Founded
in New York City**

✅

In-depth industry
competence & extensive
domain knowledge

40+
**Global
Locations**

✅

Compliance with Federal,
State, and local
laws & regulations

5,000+
**Consultants
& Engineers**

✅

Flexible
engagement models

95%
**Return
Clients**

✅

Unparalleled ability
to ramp up teams
of all sizes

Russell Karp

Senior Vice President, Media & Entertainment, New York, USA

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Russell Karp leads strategic and business development at DataArt's Media and Entertainment
Practice. In his 20+ years of technology and business consulting, Russell has spent the majority
of his career focusing on implementing feature-rich, complex media platforms. He specializes
in strategy, solution architecture, managing large-scale projects and client relationships,
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If you need a free consultation on your sportsbook business challenges, **contact us**, or explore
our **sports betting solutions**.