# nexval.ai

# ZINE DOT AI

## Nexval.ai Innovation Bi-Weekly

## Cloud Deployment: Selecting the Right Model

### Inside: 10-Month Mortgage News Roundup

**November 7, 2024**

Upcoming Edition: November 28, 2024

# From the Editor's Desk

### Navigating the Cloud Frontier

Welcome to Zine Dot AI Edition 5, where we explore the transformative world of cloud deployment, focusing on streamlined cloud migration principles.

### The Cloud Paradigm Shift

The mortgage industry's cloud journey has reached an inflection point. As lenders navigate digital transformation complexities, effective cloud adoption has become crucial. This edition, we examine the benefits, drivers, and innovations surrounding cloud migration best practices.

### Breaking Down Complexity

Cloud deployment's multifaceted benefits are dismantling traditional barriers to innovation. Our focus this issue includes:

- **Cloud Migration Strategies:** Optimizing public, private, and community cloud models

- **Cloud-Native Mortgage Solutions:** Developing tailored solutions for seamless cloud-based infrastructure integration

- **AI-Driven Cloud Optimization:** Leveraging advanced analytics for informed decision-making

### Critical Considerations for Mortgage Professionals

To support your cloud journey, we've assembled essential insights:

- **Cloud Readiness:** Essential Considerations for the Mortgage Industry, providing expert guidance on cloud preparedness

- **10-Month Mortgage News Roundup,** highlighting key industry trends and developments

- **Tech Brief:** Enhancing Credit Scoring with Gradient Boosting Machines, showcasing innovative AI applications

### Cloud-Enabled Business Growth

At Nexval.ai we're committed to harnessing cloud computing's potential to drive mortgage industry advancements. Our AI-powered solutions help lenders:

- **Transform Operations:** Enhance efficiency, reduce costs, and improve customer satisfaction

- **Mitigate Risk:** Identify and address potential risks with advanced analytics

- **Foster Innovation:** Stay ahead of the curve with cutting-edge cloud-AI applications

### Insights and Innovations

As we delve into the transformative power of cloud deployment in mortgage lending, I invite you to join our exploration of the latest innovations and advancements.

**Dr. Dipankar Chakrabarti**
**In-House Tech Advisor to Board,**
**Nexval.ai**
**Ex-PwC Executive Director**
**Certified- CMMI**
**IIT, IIM alumni**

# From Team Zine

As we continue to navigate the ever-evolving landscape of mortgage technology, we're reminded of the power of community-driven knowledge sharing. Your feedback and engagement have been instrumental in shaping Zine's content and direction.

Building on the momentum of our previous issue, where we explored the critical intersection of **Cloud-based AI Infrastructure** and mortgage innovation, we're excited to dive deeper into the world of cloud deployment.

Zine remains committed to fostering collaboration and partnership within our industry. We believe that the sharing of ideas, experiences, and expertise is essential to driving progress and excellence.

We're grateful for your continued support and look forward to engaging with you on the latest trends, challenges, and successes in mortgage technology. Your voice matters, and we invite you to join the conversation.

Thank you for being part of the Zine community.

Best regards,
Team Zine

**Sreejita D** and team,
**The Data Delvers**

**Varsha J** and team,
**The Explain-inators**

**Palash B** and team,
**AI Design Mavericks**

# What's Inside?

# Welcome to the Nexval.ai's Zine Dot AI

**What is Zine Dot AI?**

At Nexval.ai, we envisioned a future where mortgages were effortless. Inspired by our AI, we crafted a name that harmonized simplicity with innovative technology. Thus, Zine Dot AI was born - a pioneering platform that transforms the mortgage journey, harnessing the power of advanced AI to make the complex, simple

**How will Zine Dot AI make a difference for you?**

This dossier is your roadmap to mortgage industry leadership, providing expert insights and analysis to ensure you're always at the forefront of emerging trends and opportunities.

**Each issue will deliver:**



*Ready to make smarter decisions, stay ahead, and seize new opportunities? Let's dive in together!*

The mortgage industry's digital transformation is gaining momentum, with cloud computing playing a pivotal role. According to a recent study, 90% of companies see **cloud technology as essential** for growth, digital transformation and competitiveness in the marketplace. As the industry continues to evolve, selecting the right cloud deployment strategy has become a critical decision.

## What is Cloud Deployment?

Cloud deployment refers to the process of selecting, implementing, and managing cloud infrastructure to host applications, data, and services. It involves choosing from various deployment models, each with unique benefits and challenges.

## Why Mortgage Professionals Need to Consider Cloud Deployment

Mortgage professionals must consider cloud deployment to ensure regulatory compliance, enhance operational efficiency, support business growth, and mitigate cybersecurity risks. Cloud deployment enables companies to meet stringent data security and privacy requirements, streamline loan processing, reduce manual errors, and improve customer experience.

## Types of Cloud Deployment Models

- **Public Cloud:** Ideal for scalable, cost-effective solutions, public clouds (like AWS and Azure) support customer-facing applications that need flexibility. However, mortgage companies should weigh this against data privacy concerns, especially for customer-sensitive information.

- **Private Cloud:** For more secure, customizable environments, private clouds offer dedicated infrastructure, often hosted in private data centers. Mortgage companies can use these for data storage and highly sensitive operations.

- **Hybrid Cloud:** Blending public and private cloud benefits, hybrid clouds offer flexibility. For mortgage professionals, this model allows a mix of public cloud resources for scalability and private cloud for secure data handling.

- **Community Cloud:** Designed for shared industry infrastructure, community clouds can be advantageous for mortgage companies seeking collaboration within financial ecosystems, with resources and compliance measures tailored to industry standards.

- **Multi-Cloud:** By engaging multiple cloud providers, mortgage companies can avoid vendor lock-in and select services tailored to specific needs—an ideal solution for companies aiming to diversify their cloud portfolios.

## Factors to Consider When Choosing a Cloud Deployment Model

When selecting a cloud deployment model, mortgage companies must consider several factors. These include security and compliance requirements, scalability and flexibility needs, cost and return on investment, integration and interoperability with existing infrastructure and applications, and potential vendor lock-in.

### Challenges Faced by Mortgage Companies When Adopting Cloud

- **Security Concerns:** Data protection and compliance are paramount, and robust security measures like encryption and zero-trust architectures are essential.

- **Integration Complexity: :** Integrating legacy systems and managing multi-cloud environments can require specialized skills and planning.

- **Talent Acquisition and Training:** Building cloud-specific skills within teams is crucial to ensure efficient deployment and management.

- **Vendor Management:** Negotiating and managing vendor relationships can be complex, especially in a multi-cloud strategy.

- **Change Management:** Implementing cloud technology often requires significant cultural and process shifts.

### Overcoming Cloud Adoption Challenges

- **Conduct a Cloud Readiness Assessment:** Understand current capabilities and identify gaps.

- **Select the Right Cloud Partner:** Choose partners experienced in the mortgage sector and adept at navigating industry regulations.

- **Implement Advanced Security Measures:** Secure cloud data with encryption, zero-trust frameworks, and automated compliance monitoring.

- **Engage Managed Services:** Using third-party cloud management services can optimize performance and support internal teams.

- **Embrace Continuous Optimization:** Regularly assess and adjust cloud strategies to maintain efficiency and compliance.

### The Consequences of Inadequate Cloud Deployment

Inadequate cloud deployment can result in security breaches, inefficiencies, compliance violations, and a competitive disadvantage. By understanding the importance of cloud deployment and its implications, mortgage professionals can make informed decisions, ensuring a secure, efficient, and compliant cloud infrastructure that supports business growth and innovation.

In a crowded cloud market, **Nexval.ai** stands out by delivering customized cloud solutions rooted in extensive mortgage industry experience, guaranteeing secure, efficient, and compliant infrastructure that drives business growth.

# Cloud Readiness:
## Essential Considerations for Mortgage Industry Professionals

As a mortgage professional, you understand the importance of efficient and secure technology solutions. Cloud deployment offers numerous benefits, but selecting the right model requires careful consideration. Ensure a seamless transition with this **comprehensive checklist:** ✅

### I. Pre-Deployment Planning (PDP)

- **Define business goals:** Align cloud deployment strategy with specific operational and growth targets.

- **Assess current infrastructure:** Evaluate current hardware, software, and legacy systems for cloud compatibility.

- **Determine regulatory requirements:** Map out compliance needs, including GLBA, SOX, and other mortgage industry standards

### II. Select the Right Cloud Model

- **Public Cloud:** Cost-effective and scalable (e.g., AWS, Azure), suited for general processing.

- **Private Cloud:** Highly secure and customizable, ideal for sensitive data handling.

- **Hybrid Cloud:** Blends public/private cloud benefits, enhancing flexibility and security.

- **Community Cloud:** Shared infrastructure tailored for mortgage needs, with industry-specific compliance tools.

### III. Security and Compliance

- **Data encryption and MFA:** Protect sensitive mortgage data with strong security protocols.

- **Access management:** Implement role-based access control (RBAC) for sensitive areas.

- **Compliance certifications:** Confirm that providers meet SOC 2, GLBA, and other necessary certifications.

- **Disaster recovery:** Design a robust plan to ensure continuity during any system disruptions.

### IV. Integration and Migration

- **Compatibility assessment:** Test compatibility with existing systems, ensuring minimal disruption.

- **Data migration:** Develop a migration strategy that includes security checks and downtime mitigation.

- **API integration:** Facilitate secure and efficient data exchange between platforms.

- **Disaster recovery:** Design a robust plan to ensure continuity during any system disruptions.

### V. Vendor Selection and Management

- **Due diligence:** Research providers with financial services expertise and robust support.

- **Review SLAs:** Set clear expectations for performance, data recovery, and security.

- **Vendor monitoring:** Establish regular performance and compliance reviews to ensure alignment.

## VI. Staff Training and Support

- **Train staff:** Equip team members with the necessary skills for cloud usage and security.

- **Provide ongoing support:** Ensure resources are available for troubleshooting and upgrades.

- **Change management:** Communicate cloud benefits to stakeholders to promote adoption.

## VII. Cost & ROI Evaluation

- **Total cost of ownership (TCO):** Factor in costs like migration, compliance, and security.

- **Projected ROI:** Assess potential ROI from improved operational efficiency, security, and agility.

- **Scalability benefits:** Consider long-term cost savings from flexible resource allocation.

# AI Spotlight

## Cloud Deployment Strategies: Leveraging Hybrid Cloud for Mortgage Operations

### Understanding Hybrid Cloud
Hybrid cloud combines the best aspects of public and private clouds, providing flexibility and the ability to scale quickly while maintaining security for sensitive data. This setup allows mortgage companies to adapt their infrastructure to their business needs, leveraging the benefits of both cloud types for improved efficiency and compliance.

### Hybrid Cloud Benefits
- **Security and Compliance:** With private cloud options for sensitive data, hybrid cloud offers compliance advantages essential for safeguarding borrower information and meeting regulatory standards.
- **Scalability and Flexibility:** Public cloud resources can support fluctuating workloads, such as seasonal spikes in loan applications, without compromising performance.
- **Cost Optimization:** Mortgage companies can cut costs by using public cloud services for non-sensitive tasks while reserving private cloud environments for highly regulated data, optimizing resources for both efficiency and compliance.

### Mortgage Industry Adoption
Hybrid cloud combines the best aspects of public and private clouds, providing flexibility and the ability to scale quickly while maintaining

**63%**
of mortgage companies use hybrid cloud

**21%**
use public cloud

**12%**
use private cloud

**4%**
use community cloud

### Key Drivers

- Regulatory Compliance: Hybrid cloud provides secure storage options for sensitive borrower data, helping lenders comply with industry standards.
- Legacy System Integration: Hybrid cloud supports the integration of legacy infrastructure, essential for mortgage companies with existing systems that cannot easily be migrated.
- Business Agility: The hybrid approach enables rapid scaling and flexibility, allowing lenders to adjust resources to meet changing market demands.

### Real-World Applications
- **Streamline Loan Processing:** By leveraging hybrid cloud infrastructure, lenders can significantly reduce loan approval times through automation, minimizing manual errors and increasing
- efficiency.
  **Improve Risk Assessment:** Advanced data analytics enabled by hybrid cloud helps lenders make better credit decisions, reducing risk and enhancing borrower assessment processes.

### Future Outlook
As the mortgage industry continues to innovate, hybrid cloud adoption is expected to increase, with the integration of AI and machine learning capabilities for predictive analytics and real-time data insights. Cloud-native mortgage platforms will further streamline processes, improve customer experience, and enhance operational efficiency, ensuring that hybrid cloud remains a cornerstone of mortgage companies' technology strategies.

Hybrid cloud has emerged as the dominant cloud deployment model in the mortgage industry, offering a perfect blend of security, scalability, and cost optimization. As the industry continues to innovate, hybrid cloud will remain vital to mortgage companies' technology strategies.

# Tech Brief

## Enhancing Credit Scoring with Gradient Boosting Machines

As the mortgage industry migrates to cloud-based infrastructure, leveraging advanced machine learning models like **Gradient Boosting Machines (GBMs)** becomes increasingly vital for credit scoring. Cloud deployment enables seamless integration of GBMs, facilitating enhanced risk prediction and accuracy.

Gradient Boosting Machines (GBMs) offer a sophisticated approach to credit scoring that improves upon traditional models. While conventional metrics like FICO scores and debt-to-income ratios are widely used, they often miss key borrower risk indicators by overlooking alternative data sources, such as rent payment history and utility bills.

GBMs, a machine learning model that builds a sequence of decision trees, excels at refining risk predictions by iteratively correcting errors from previous models. According to Souren Sarkar, Nexval's CEO and Co-Founder, **"GBMs enable lenders to draw on alternative data to create a more accurate borrower risk profile, reducing false positives and negatives by up to 20%."**

By integrating GBMs into credit scoring, mortgage lenders can:

- **Reduce Risk:** Gain a nuanced view of borrower risk with up to 20% fewer false positives and negatives.

- **Increase Loan Approvals:** Identify creditworthy borrowers previously missed by traditional models.

- **Enhance Profitability:** Approve high-quality borrowers who may lack conventional credit histories.

"GBMs can serve as an overlay to traditional scoring models, offering lenders a unique competitive edge," adds Souren. This powerful combination of accuracy and adaptability makes GBMs an ideal solution for forward-thinking mortgage companies.

Learn how to adopt GBMs in your credit scoring model: Read the full article here to explore our guide on integrating GBMs to advance lending operations.

# 10 Month Mortgage News Roundup

**Key Stats**

1. Mortgage debt: $12.58 trillion
2. Foreclosure filings: 32,938
3. National delinquency rate: 3.09%
4. AI adoption: 7% of lenders
5. Federal Reserve interest rate cut: 0.5 percentage points
6. Mortgage applications fell 17%

## 2024 Mortgage Outlook: Moderating Growth Amidst Rate Volatility

### Key Findings:

- Total mortgage debt in the US reached **$12.58 trillion** in **January 2024,** accounting for **72.6%** of total consumer debt.

- The median home price surged to **$419,300** in **May 2024,** representing a **6%** year-over-year increase.

- Interest rates fluctuated throughout 2024, with the average **30-year mortgage rate ranging from 6.86% to 7%.**

- The national delinquency rate rose to **3.09%** in **April 2024,** indicating growing concerns about borrower affordability.

- **Artificial Intelligence (AI)** and **Machine Learning (ML)** adoption increased among lenders, with **7% deploying AI/ML solutions and 22% in trials.**

### January

- In January 2024, total consumer debt in the US was **$17.33 trillion,** with mortgage debt making up **72.6%** of that. This includes **$12.58 trillion** in mortgage debt, including home equity loans.

- In January 2024, the number of homes actively for sale was **7.9% higher** than the previous year, while the number of unsold homes increased by **6.5%.**

- The median price of homes for sale this January remained relatively stable compared to the same time last year, growing by **1.4%.**

- In January 2024, 12 states posted year-over-year increases in overall delinquency rates, while **19 states were unchanged.** Oklahoma posted the largest annual decline at **-0.3%.**

### February

- New home sales in the US fell by **0.3%** in **February 2024** to a seasonally adjusted annual rate of **662,000 units.**

# 10 Month Mortgage News Roundup

- The ATTOM Report revealed mixed trends in US foreclosure activity for **February 2024.** There were a total of **32,938 U.S. properties** with foreclosure filings in **February 2024.** While this marks a marginal **1% decrease** from the previous month, it represents an **8% increase** from the same period last year.

## March

- Mortgage applications for new home purchases increased **6.2%** in **March 2024** compared to the previous year. The **FHA** share of applications increased to **exceed 26%,** compared to a **24% average for the prior 12 months.**

- Monthly mortgage payment increased by **2.8%** in **March 2024.** The median price of single-family homes increased by **2.4%.**

- Compared to one year ago, affordability fell in March as the monthly mortgage payment climbed by **7.7%** and median family income rose by **5.2%.** The effective 30-year fixed mortgage rate was **6.90%** this March compared to **6.62%** one year ago. Nationally, mortgage rates were up **28 basis points** from one year ago.

## April

- The national delinquency rate was **3.09%** in April, the second lowest on record. Serious delinquencies improved to their best level since **August 2005.**

- Foreclosure starts declined **0.8%** from March, pushing the number of loans in active foreclosure to its lowest level since **January 2022.**

- Prepayment activity **rose to its highest level** since **August 2023** due to a seasonal upswing in home sales, despite consumers still facing rate-driven affordability and refinance headwinds.

- Mortgage rates rose above **7%** in April and these higher rates slowed the housing market with declines in home sales and new construction.

## May

- The **median home price jumped** to a record high of **$419,300** in **May 2024,** a **6%** increase from **May 2023.** Home price growth increased another **6.3%** in April. In response to these price spikes, NAR's Housing Affordability Index dipped below 100, suggesting that a median-priced home is no longer affordable for a median-income family.

## June

- The Fed **did not cut rates** at its June meeting stating it wanted more evidence that inflation is cooling before cutting interest rates.

- Fannie Mae reports that mortgage lenders are increasingly **adopting AI** to improve operational efficiency by automating manual processes, detecting fraud, and enhancing customer service.

# 10 Month Mortgage News Roundup

- TransUnion's first quarter Credit Industry Insights Report noted **delinquencies continue to rise** across several credit categories, including credit cards, mortgages and auto.

- The decline in mortgage rates back below **7%** helped mortgage applications for home purchase to rise by **5.1% m/m** in June.

## July

- AI and ML are reshaping the mortgage industry by automating processes and improving risk management. While only **7% of lenders have deployed AI/ML,** **22%** have started trials, indicating a growing trend.

- As of **July 22, 2024**, the average 30-year mortgage rate was **6.86%,** which is still higher than the sub-3% rates many buyers locked in during the pandemic.

- Home sales continue to **remain low** even as mortgage rates ease slightly, and while we see improvement in inventory, it remains below pre-pandemic averages.

- Foreclosure Starts Increase **18%** from Last Month; Completed Foreclosures Increase **14%.**

## August

- Share of Mortgage Loans in Forbearance Increases to **0.27%** in July - The Mortgage Bankers Association (MBA) reported an increase in the share of mortgage loans in forbearance, attributed to recent natural disasters.

- Mortgage Applications Decrease - MBA reported a **10.1%** decrease in mortgage applications from the previous week.

- The average fixed mortgage rate in August was **4.8%,** down from **5.9%** the previous year.

## September

- The Federal Reserve has **cut interest rates** for the first time since the early days of the COVID-19 pandemic, lowering its key overnight borrowing rate by **0.5 percentage points (50 basis points) to a range of 4.75%-5%.**

- The NAHB/Wells Fargo Housing Market Index of builder confidence **rose to 41** in September from **39** in August.

- Freddie Mac revises fraud reporting guidelines, **increasing servicer requirements** and mandating pre-referral due diligence.

## October

- Industry experts predict a **surge in mergers and acquisitions** in the mortgage sector in 2025, fueled by declining interest rates and renewed market confidence.

- Mortgage applications fell by **17%** for the week ending October 11, 2024, as mortgage rates surged following a positive jobs report.

# 10 Month Mortgage News Roundup

- The CoreLogic Mortgage Application Fraud Risk Index increased by **8.3%** over the past year. Identity and transaction fraud were the primary contributors to this rise, with California experiencing the largest overall fraud risk increase at **14.6%.**

### 2025 Outlook:

- The mortgage sector is predicted to experience a surge in mergers and acquisitions in 2025, driven by declining interest rates and renewed market confidence.

- Mortgage rates are expected to stabilize, with the average 30-year rate hovering around **6%.**

- Home price growth will moderate, with annual appreciation rates of **3-5%** anticipated.

- There will be an increased focus on affordable housing initiatives and programs.

### Recommendations:

- Lenders should invest in AI/ML solutions to streamline processes and enhance customer experience.

- Borrowers should consider flexible mortgage options and adjust budgets to accommodate potential interest rate fluctuations.

- Policymakers should closely monitor delinquency trends and support affordable housing initiatives.

### Risks and Opportunities:

- Economic uncertainty, driven by inflation and interest rate fluctuations, poses a significant risk to the mortgage market.

- Regulatory changes, such as Freddie Mac's revised fraud reporting guidelines, will impact lender operations.

- Technological advancements, particularly AI/ML adoption, will reshape the mortgage landscape.

- The shift to a purchase-driven market presents opportunities for lenders to adapt and innovate.

# AI Across Industries
## Flavors of Innovation: Kitchen Robotics



In the culinary world, the phrase "too many cooks in the kitchen" might soon be a relic of the past. Enter **Hyphen,** the innovative company whipping up a storm with its robotic kitchen assembly line, Makeline.

Imagine a kitchen where humans and robots harmonize like a well-choreographed dance troupe. The Makeline's dual-line design ensures analog and autonomous workflows blend seamlessly. While humans focus on the creative aspects, robots take care of the heavy lifting – assembling up to **350 meals per hour** with 99.9% accuracy!

**Key statistics:**

| | |
|---|---|
| **350 meals/hour:** Makeline's production capacity | **99.9% accuracy:** AI-driven quality control |
| **2022:** Chipotle partnered with Hyphen, investing in the company | **$22B:** AI-Projected global kitchen automation market by 2025 |

But what really sets Makeline apart is its AI-powered vision. This culinary "eye" monitors order quality, accuracy, size, and ingredient inventory in real-time. The companion OS ensures inventory management, digital order fulfillment, and issue resolution are all streamlined.

As kitchen robotics gains momentum, the culinary world is poised for a transformative shift, where automation optimizes operations and chefs refocus on creative genius.

# Upcoming Event to Add to Your Calendar!



**Mark Your Calendar: NPPC 2024**

The **National Property Preservation Conference (NPPC) 2024** is a leading industry event focused on property preservation, mortgage field services, and default management. This annual conference brings together professionals from mortgage servicers, lenders, government agencies, and contractors to discuss best practices, share expertise, and address the latest challenges in property preservation. Experience innovative sessions featuring the latest advancements in AI and tech, driving growth and innovation in real estate finance.

**Dates:**
11th November – 13th November

**Venue:**
MGM National Harbor Hotel & Casino, Washington D.C.

**Why National Property Preservation Conference (NPPC) 2024?**

- ✅ Stay updated on regulatory requirements and industry standards

- ✅ Network with key stakeholders, including servicers, lenders, and contractors

- ✅ Gain insights on emerging trends in property preservation and default management

- ✅ Learn strategies for improving efficiency, reducing costs, and enhancing compliance

- ✅ Discover innovative solutions and technologies in property preservation

- ✅ Engage with government agencies and industry organizations shaping policy

- ✅ Access training and education on industry best practices

Attending NPPC 2024 connects professionals with industry expertise, best practices, and **AI-driven Property Preservation Solutions,** collectively supporting a more efficient, compliant, and resilient mortgage ecosystem.

# nexval.ai

## The Big Picture

At Nexval.ai, we leverage AI to deliver customized solutions tailored to your industry's unique needs.

We're not just about technology **- we're about partnership.** We collaborate with your team to understand your processes and goals, ensuring a seamless transition and ongoing optimization.

Our expertise spans mortgage and financial services, with a focus on automation, IT, BPO, customer service, risk management, and AI-driven process optimization.

Let's transform your business with intelligent automation and data-driven strategies.

Share your thoughts, shape the future! **Let's mortgage-better with AI.**

### Let's Connect:

Press/Media: pr@nexval.ai
Zine Dot AI Team: info@nexval.ai
Marketing: marketing@nexval.com

Scan this QR code to visit our website: **nexval.ai**

### US Headquarters:

Nexval, Inc,
1101 Brickell Avenue South Tower,
8th Floor Miami, FL 33131
Phone: (786) 206-9056,
Fax: (888) 462-4823

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