Deep Dive into Cloud and Data

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Data, Generative AI, Cloud

Deep(ish) Dive

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Data
Key Challenges to Leveraging Data

- 82% have not been able to remove data silos\(^2\)
- 40% cite distribution and number of data sources impacting outcomes\(^3\)
- 37% cite data type variety as a complexity impacting outcomes\(^3\)
- 41% cite that data is changing faster than they can keep up with\(^4\)
- 31% cite data technology debt\(^3\)
- 24% do not trust their data\(^5\)
- 29% have issues with data quality\(^5\)

\(^2\)Source: Future Enterprise Resiliency & Spending Survey – Wave 11, IDC, December, 2022, N=840
\(^3\)Source: IDC Data Management Survey, 2023, N=1021
\(^4\)Source: Global Data Valuation Survey, IDC, 2023, N=1024
\(^5\)Source: Future Enterprise Resiliency & Spending Survey Wave 2, IDC, March, 2023, N = 952
Data Architecting for Enterprise Intelligence Success
Enterprise Intelligence Architecture (EIA) is a conceptual representation of attributes, technologies, and functionality enabling execution of Enterprise Intelligence strategy.

Each plane is aligned with personas:
- DBAs and data architects operate in the data plane;
- Data engineers and data stewards in the data control plane;
- Data scientists and data analysts in the data analysis plane;
- Planners, business decision makers, and even automated decisioning systems in the decisioning plane.

Enterprises should identify missing components of their EIA.
Investing in Data Management and ROI

Where is the money coming from?

- **55% Centralized** (i.e., through a centralized, enterprise-level IT budget)
- **45% De-centralized** (i.e., individual units, departments, groups)

Where is the money coming from?

- 72% from IT groups
- 28% from Business groups

What is the return?

Financial Improvement +8.4%
- +4.5% improvement with a *low level* of data intelligence

Operational Improvement +10.7%
- +6.9% improvement with a *low level* of data intelligence

35% reported significant data management improvements
- 8% with *low levels* of data intelligence reported significant improvements

Source: IDC Data Management Survey, 2023, N=1021
Generative AI (gAI)
How to Prepare for and Embrace Generative AI

1. Create an environment of experimentation for the right/prioritized use cases

2. Develop policies around responsible use of generative AI and inhibit nefarious scenarios

3. Engage in proactive change management impact on workforce

4. Partner with trusted technology solution suppliers and service providers

5. Prepare for fine-tuning prompt tuning skills through hiring, reskilling and/or professional services support
AI Governance Starts at the Executive Level

Chief Financial Officer
- AI cost and financial risk

Chief Marketing Office
- AI customer and brand charters

Chief Data Officer
- Evolution of AI governance charter and data governance

Chief Legal and Compliance/Risk Officer
- AI legal and risk factors for the organization

Chief Executive Officer
- The AI governance charter and organizational accountability

Chief Human Resources Office
- The creation of AI employee policy and charter

CIO/CTO
- The evolution of adversarial robustness

Poor AI governance increases the risk of unintended, negative consequences and is complicated by shifting regulations.
Preparing for Change: Baseline-setting to Drive gAI

01 Centralized, cross-functional (LOB/IT), gAI platform team
- Develop and maintain a platform service where approved generative AI models can be provisioned on demand for use by product and application teams
- Define protocols for how generative AI models integrate with internal systems, enterprise applications and tools, and develops and implements standardized approaches to manage risk, such as responsible AI frameworks

02 Roles - staff with right skills
- Senior technical leader as GM
- Data engineers to build pipelines
- Data/ML scientists models and prompts; fine tune models with new data sources
- Prompt engineers to develop, refine and optimize AI generated text prompts
- MLOps manage deployment and monitoring
- AI ethicists develop ethical guidelines and policies for AI projects
- AI risk experts manage issues such as data leakage, access controls, output accuracy
- LOB personas provide business process and rules guidance
- AI champions as catalysts to integrate AI

03 Hiring/upskilling for a culture of innovation
- Rethink talent management/retention
- Adapt academy models to provide upskilling by role, proficiency and business goals
- Provide training and corresponding certifications to both technical and non-technical talent
- Ensure every knowledge worker has basic AI skills
- Run AI hackathons, ideation workshops
- Run AI summits
Prioritizing gAI Opportunities
Balancing risk, value, complexity, and data quality

**Preparation**
- Identify use cases aligned with AI vision

**Ideate**
- Assess use cases by value, complexity, risk, data quality

**Assess**
- Cluster use cases and prioritize

**Prioritize**
- Industrialize successful use cases

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>Economic value</td>
<td>Data processing</td>
</tr>
<tr>
<td></td>
<td>Strategic alignment</td>
<td>Algorithm</td>
</tr>
<tr>
<td>Complexity</td>
<td>Data quality</td>
<td>Required 'know-how'</td>
</tr>
</tbody>
</table>

- Low
- High

**Data Quality**
- Low
- High

**Complexity**
- Low
- High

High-risk use case
We are Over-Spending on Cloud

A majority of clients report over-spending on their Cloud budget

Is your organization currently spending more on Cloud than you budgeted?

- By 2024, IDC estimates 54% of IT spend will be on Cloud
- Clients report Cloud overspend is 30%

“Is your organization currently spending more on Cloud than you budgeted?”

- 64% Yes
- 33% No
- 3% Unsure

- My biggest issue right now: explaining the spiraling Cloud costs to the CEO, the CFO and Procurement teams
  – CIO, Tier 1 Global Bank
FinOps Principles
A common understanding of FinOps principles drives success

- Business and IT teams need to collaborate
- Decisions are driven by **business value** of Cloud
- Everyone takes ownership and **accountability** of their Cloud usage
- FinOps reports should be **accessible and timely**
- A **centralized team** drives FinOps
- Take **advantage of the variable cost** model of the Cloud

Source: FinOps Foundation
Managing Cloud Value

85% of Fortune 500 companies have FinOps programs

Inform
- Setting tags (descriptive metadata)
- Reporting – spending visibility and transparency
- Budgeting and forecasting
- Cost allocation - chargeback/showbacks
- Assembling a cross-disciplinary team

Optimize
- ROI
- Rightsizing
- Workload placement
- Rate and discount optimization
- Culture and ownership
- Minimizing waste and unused resources
- Identifying tools and software
- Value versus cost

Operate
- Automate
- Centralized billing
- Defined control and governance; embed FinOps in processes and operations
- Communicate optimizations and spend patterns to inform stakeholders
Creating a FinOps Organization for Cloud Value

Left-shift as much as possible in building a FinOps organization. But it’s never too late

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FinOps Practitioner Lead</strong></td>
<td>Jack of all trades (knowledge of Finance, IT, Ops, Dev). Evangelist who drives agenda company-wide</td>
</tr>
<tr>
<td><strong>Cloud Engineering, Infrastructure Operations</strong></td>
<td>Architect cost effective Cloud infrastructure</td>
</tr>
<tr>
<td><strong>DevOps Manager</strong></td>
<td>Understand how code changes and decisions impact costs</td>
</tr>
<tr>
<td><strong>Procurement</strong></td>
<td>Contractual requirements, relationships. Cost comparisons between hyperscalers</td>
</tr>
<tr>
<td><strong>Finance</strong></td>
<td>Budget versus actual spending, proper allocation of costs, forecasting</td>
</tr>
<tr>
<td><strong>Line of Business Product Manager</strong></td>
<td>Supply and demand, how BU requirements impact costs</td>
</tr>
<tr>
<td><strong>Executive Sponsor</strong></td>
<td>C-level to empowering team to meet overall business objectives</td>
</tr>
</tbody>
</table>
# Cloud Pain Points Addressed

Roles in the organization coordinate to address Cloud points of pain

<table>
<thead>
<tr>
<th>Pain Point</th>
<th>FinOps</th>
<th>Engineering</th>
<th>Business</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive engineering action</td>
<td>Inform opportunities</td>
<td>Optimize, mitigative action</td>
<td>Set priorities</td>
<td>Set objectives</td>
</tr>
<tr>
<td>Accurate forecasting of Cloud spend</td>
<td>Optimize</td>
<td>Provide input</td>
<td>Provide plans</td>
<td>Collaborate</td>
</tr>
<tr>
<td>Organizational adoption of FinOps</td>
<td>Communicate FinOps &quot;story&quot;</td>
<td>Training</td>
<td>Training</td>
<td>Training</td>
</tr>
<tr>
<td>Enabling FinOps automation</td>
<td>Define business case</td>
<td>Automate operations</td>
<td>Automate reporting</td>
<td>Automate integration</td>
</tr>
<tr>
<td>Reducing Cloud waste and unused resources</td>
<td>Inform and optimize</td>
<td>Operate with FinOps standards</td>
<td>Agree on standards</td>
<td>Set objectives</td>
</tr>
<tr>
<td>Aligning finance and procurement</td>
<td>CIO leadership</td>
<td></td>
<td>CFO leadership</td>
<td></td>
</tr>
<tr>
<td>Full allocation of Cloud</td>
<td>Develop showback</td>
<td>Operate with FinOps standards</td>
<td>Dashboards</td>
<td>Develop chargeback</td>
</tr>
<tr>
<td>Allocating shared costs</td>
<td>Develop showback</td>
<td>Operate with FinOps standards</td>
<td>Dashboards</td>
<td>Develop chargeback</td>
</tr>
<tr>
<td>Multi-Cloud cost reporting</td>
<td>Develop showback</td>
<td>Operate with FinOps standards</td>
<td>Dashboards</td>
<td>Develop chargeback</td>
</tr>
<tr>
<td>Hybrid Cloud cost reporting</td>
<td>Develop showback</td>
<td>Operate with FinOps standards</td>
<td>Dashboards</td>
<td>Develop chargeback</td>
</tr>
</tbody>
</table>

Source: FinOps Foundation, 2022
Cloud Pain Points Addressed

FinOps primary capabilities are supported by contributions from the business to drive value

<table>
<thead>
<tr>
<th>Priority Capabilities</th>
<th>Business Contribution</th>
<th>Business Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost allocation (tags, labels, hierarchy)</td>
<td>Defining relevant structure to business alignment</td>
<td>Cost transparency</td>
</tr>
<tr>
<td>Data analysis and showback</td>
<td>Define business-relevant reporting standards</td>
<td>Informed usage incurs cost</td>
</tr>
<tr>
<td>Manage commitment-based resources</td>
<td>Spending controls</td>
<td>Appropriate cost to business value</td>
</tr>
<tr>
<td>Manage anomalies</td>
<td>Determine</td>
<td>Appropriate cost to business value</td>
</tr>
<tr>
<td>Forecasting</td>
<td>Cloud investment planning and priorities</td>
<td>Clear options and better decisions</td>
</tr>
<tr>
<td>Manage shared costs</td>
<td>Defines clear cost allocation methodology</td>
<td>Informed usage incurs cost</td>
</tr>
<tr>
<td>Budget management</td>
<td>ROI, evaluation parameters</td>
<td>Optimal spend versus innovation balance</td>
</tr>
<tr>
<td>Resource utilization and rightsizing</td>
<td>Spending controls</td>
<td>Lower costs</td>
</tr>
<tr>
<td>Establish FinOps culture</td>
<td>Align to organizational objectives</td>
<td>Corporate objectives met</td>
</tr>
<tr>
<td>Workload management and automation</td>
<td>Support business-aligned management/automation</td>
<td>Improved decision making on value</td>
</tr>
<tr>
<td>Measure unit costs</td>
<td>Inform on meaningful business measurements</td>
<td>Enables benchmarking and KPIs</td>
</tr>
<tr>
<td>Chargeback and IT finance integration</td>
<td>Agree and support models</td>
<td>Informed usage incurs cost</td>
</tr>
</tbody>
</table>

Source: FinOps Foundation, 2022
What to Take Away

Cloud, data, and generative AI are inextricably linked

You can’t fix by analysis what you have bungled by design
  • Get your data house in order

Successful leverage (business value) of AI and gAI requires solid foundations
  • Good data, transparent, well-managed Cloud, clear, articulated policies

Generative AI is a business transformer
  • Don’t treat it like just another IT project. Engage the C-suite and be mindful of its risks

FinOps value outweighs the effort to build, run, and staff the organization
  • Equips the business with tools to evaluate the value of their Cloud decisions

Automation of Cloud management drives cost savings and value
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Robert Ford | Chief Strategy Officer

Seasoned CEO, CSO, CIO, and Engineering Lead who has personally driven large enterprise digital transformations. Works alongside customer executives and technical teams to share experiences and strategies to drive confidence in the cloud, unleash innovation, and enable customers to go faster and further realizing their cloud ambitions.

The Ford Consultancy Group | Northwest University | Microsoft EMEA & CORP

British Army | Royal Green Jackets

Columbia University NY | National University Singapore
Cloud Governance
The New Cloud Frontier To Master

• What is cloud governance?
• Why the new frontier?
• What matters most?
What is cloud governance?
Cloud Governance | Cloud with Confidence

- **Control** | Remain on posture
- **Ownership** | Drive accountability & action
- **Notification** | Provide proactive alerts
- **Fidelity** | Trust (and verify)
- **Intelligence** | Mainstream AIOps
- **Discovery** | Always current & complete
- **Expediency** | In (ahead of) the moment
- **NextGen** | Front the innovation curve
- **Compliance** | Stay continuously compliant
- **Efficacy** | Cloud with Confidence
Why the new frontier?
Cloud Governance | The Cloud Frontier to Master

Why

Which

Migration

Management

Governance

Doing Things Right

Doing The Right Things Right
Cloud Governance | The Cloud Frontier to Master

Cloud Management Spectrum
(Doing Things Right)

Hyperscaler Portals + Consoles (crawl)
CMP Products Home-Grown (walk)
Reactive Siloed Tactical Technical Copilot

NextGen Cloud Governance
(Doing The Right Things Right)

Cloud Governance Platform | Integrated, Automated, Intelligent (Run | Fly)
Prescriptive Holistic Strategic Adaptive Autopilot
What matters most?
Cloud Governance | Platform Matters

The CoreStack Platform

**Extract**
- Discover, capture and derive greater cloud resource perspective
- Contextualize Map
- Connectless
- Declared + Derived

**Enhance**
- Normalize
- Create a holistic single system of intelligence for all cloud resources
- Workload
- Hierarchy
- Cost
- Project
- Dependency

**Enrich**
- Deepen AI capabilities and insights with anonymized governance data corpus

**Expose**
- FinOps
- SecOps
- CloudOps
- GreenOps

At Enterprise Scale
Cloud Governance | Mainstream AI Matters

“Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!” Lewis Carroll

Generative AI
Creation
- Policy & Rule Creation
- Cost Modelling
- Security Simulation
- Richer Discovery
- Configuration Advice

Cognitive AI
Experience
- Conversational Governance
- Agents | Chatbots
- Advanced Analytics

Applied AI
Automation
- Forecasting
- Benchmarking
- Cost Optimization
- Remediation
- Anomaly detection

Domain AI
Foundation | Data
- Data Platform | CR360
- Reach/Integration
- DQ (ROT + Bias)

CONFIDECE
- Control | Remain on posture
- Ownership | Drive accountability & action
- Notification | Provide proactive alerts
- Fidelity | Trust (and verify)
- Intelligence | Mainstream AIOps
- Discovery | Always current & complete
- Expediency | In (ahead of) the moment
- NextGen | Front the innovation curve
- Compliance | Stay continuously compliant
- Efficacy | Cloud with Confidence
1. **Position the Cloud correctly** (why)
   All roads digital lead to and from the cloud (cloud POV)
   - Clear IT Rank and Mandate
   - Create shared Context, Purpose & Urgency
   - Communicate | Leaders amplify the cause

2. **Frame the Cloud Strategy** (how)
   Inform the idea more than just enable the decision
   - Cloud Positioning (Motivators)
   - Cloud Principles
   - **Cloud Governance** →

3. **Lead with Product Vision** (what)
   Tech-forward business strategy / initiative
   - Headline | North Star
   - Prioritized scenarios
   - Realized Cloud Value | Outcomes
   - Dependencies
   - Investment
Cloud Governance | Key Take Aways

1. Ensure Cloud Governance gives your organization the CONFIDENCE to go further, faster
2. Cloud Governance well begun; DX half done | Do the right things right
3. Position the Cloud correctly | All roads digital lead to, from and ride on the Cloud
4. Focus on what matters most | Platform (Data), Mainstream AI, Cloud Governance
5. Be Vision-Led and Priority-Driven, and as CIO's, boldly lead!
CORESTACK
Cloud with Confidence