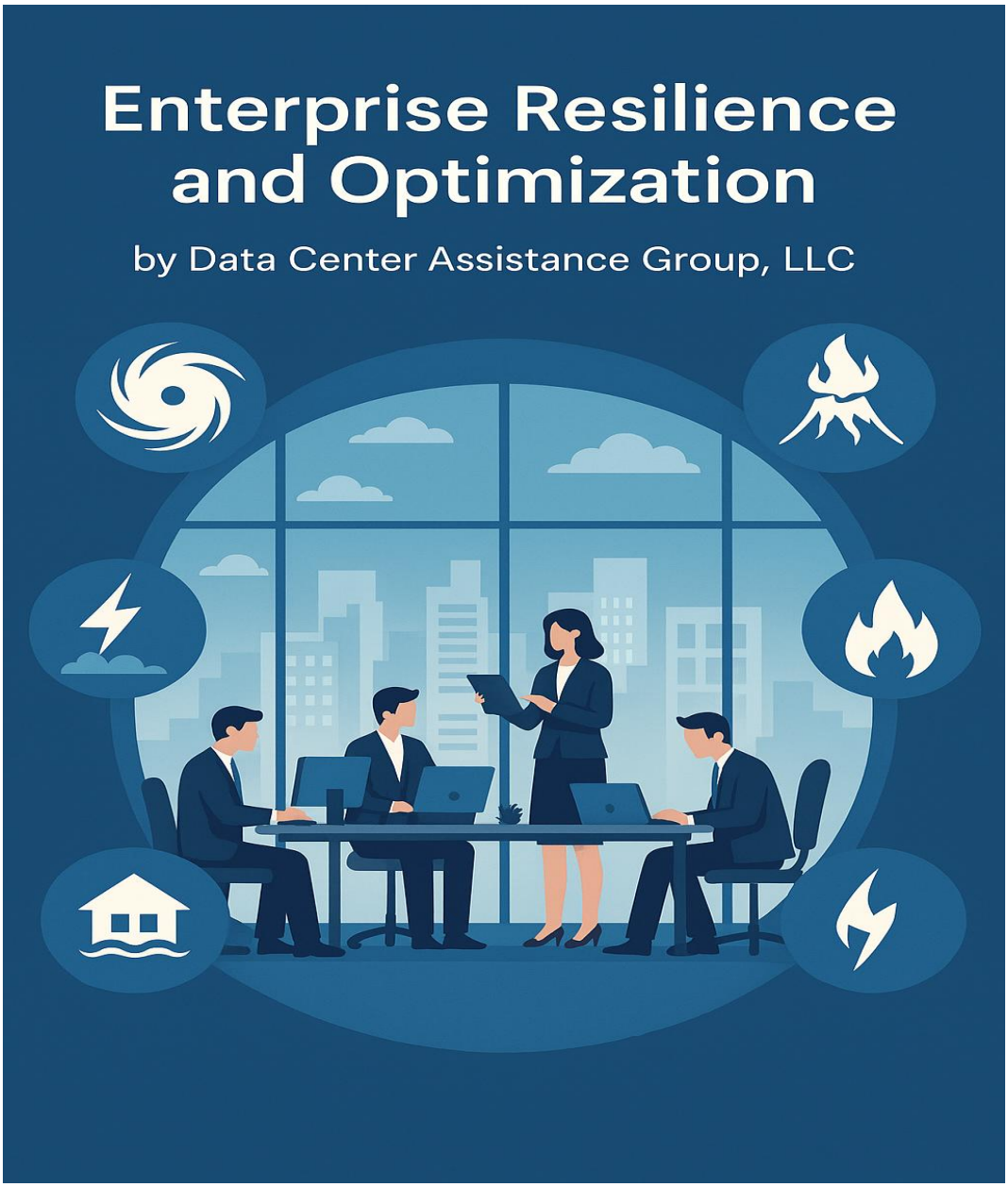

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1 Executive Overview:

This document is designed to provide a road map for performing Enterprise Resilience and Optimization to support business service continuity during times of crisis and disaster events. The document will illustrate how to develop and implement enterprise-level IT strategies to ensure that the technology platform is highly aligned with business goals and capable of supplying continuous client services in accordance with Service Level Agreements and Recov

1.1 Process Overview

Begin by translating strategic business objectives into a clearly defined IT vision, using a framework like TOGAF to align architecture, systems, and service delivery with measurable business outcomes. The process includes engaging executive stakeholders to identify pain points, compliance requirements, growth targets, and operational priorities. From there, assess the current technology landscape—including infrastructure, cloud platforms, and application ecosystems—to identify capability gaps and integration opportunities.

Then analyze the strategic future direction sought by the company, such as new or enhanced products and services and their delivery methods. Review resilience and recovery requirements along with the laws and regulations defining the company's audit universe.

Once the strategic roadmap is set, ensure its execution is conducted through phased initiatives that include DevSecOps adoption, automated vulnerability management (e.g., SBOM/RBOM integration with Patch and Release Management), and zero-trust security frameworks. Consider the creation of operationalized security and compliance requirements within the software and data development lifecycle, supporting the business's go-to-market and regulatory goals. This includes the integration of an Application Factory with Control Gates between phases to ensure alignment with standards and procedures. The goal of this activity is to ensure the delivery of applications where all components are at current release levels and free of all KNOWN vulnerabilities, so that an Authorization to Operate (ATO) can be achieved.

By continually measuring and adjusting strategies based on KPIs, service performance, risk exposure (KRIs), and business feedback—ensuring ongoing alignment, cost-efficiency, and resilience in a rapidly changing digital landscape. This process will rapidly identify NEW vulnerabilities, so that quick response to NEW vulnerabilities can be achieved to avoid hackers using discovered vulnerabilities to launch new malware attacks.

1.2 Managing networks and IT Architecture

Manage enterprise IT architecture, including networks, servers, cloud platforms, storage and terminal systems.

Assess and Document the Current State of IT Infrastructure

- Inventory all systems: on-premises servers, network devices, cloud instances, storage arrays, endpoint devices.
- Identify legacy vs. modern components and areas requiring consolidation or replacement.
- Identify configurations at facilities and locations through inventory tags.
- Evaluate against compliance frameworks (e.g., NIST, ISO 27001, FedRAMP).

Use ServiceNow *CMDB to achieve this goal, or other Inventory Management tool.*

1.3 Design a Unified, Scalable Architecture

- Apply architectural frameworks (TOGAF, ITIL, COBIT) to guide modernization.
- Define reference architectures for hybrid cloud, secure access (Zero Trust), and high-availability systems.
- Establish standards for network segmentation, redundancy, and endpoint configuration.

Implemented Zero Trust, secure DevSecOps pipelines, and AWS-based hybrid environments (Resilience Hub, CloudWatch, etc.).

1.4 Plan and Execute Cloud Platform Strategy

- Select cloud providers (AWS, Azure, GCP) based on business requirements and compliance needs.
- Migrate workloads using IaC (Infrastructure as Code), DevOps automation, and data classification tiers.
- Utilize multi-region deployments and edge computing where performance or compliance requires it.

This direction has been p*roven at companies like Fannie Mae (IaC, OaC, MaC) and through DevSecOps support.*

1.5 Implement Governance, Security & Access Controls

- Apply IAM principles (RBAC/ABAC, MFA, PKI) and integrate ZTA for network and user authentication.
- Follow Resilience Maturity Management (RMM) and CSF 2.0 roadmaps to assist in securing your environment.
- Use monitoring (SIEM, CTEM, CNAPP) and configuration compliance tools (AWS Inspector, CloudWatch).

- Automate patching, Release Management, backups, and rollback procedures.

Security architecture experience includes identity, access control, threat mitigation, and policy enforcement.

1.6 Coordinate Cross-Functional Infrastructure Teams

- Direct DevOps, InfoSec, IT support, and compliance functions toward common SLAs, KRIs, and KPIs.
- Implement service-level dashboards and escalation protocols for incidents.
- Review change management processes to support uptime and minimize disruption.

Use your *SRE teams to define SLAs and manage infrastructure upgrades and monitoring across business lines.*

1.7 Optimize Performance, Cost, and Lifecycle Management

- Implement capacity planning and predictive analytics using observability tools (OaC).
- Track TCO of infrastructure components (servers, storage, licenses).
- Align procurement with lifecycle, vendor contracts, and licensing terms.

I*mplemented TCO tracking and CMDB integration for IT asset and configuration management.*

1.8 Continuously Evaluate Emerging Technologies

- Monitor new hardware/software architectures (edge computing, AI Ops, PQC-ready systems).
- Perform pilot tests and Proofs of Concept (PoC) to validate business value.
- Maintain flexibility by adopting innovations that reduce costs or improve resilience.

You should actively incorporate forward-looking trends like PQC, Agentic AI, and CTEM frameworks.

2 Core Systems Objective Overview:

Ensure core systems that drive business operations—such as ERP (Enterprise Resource Planning), MES (Manufacturing Execution Systems), CRM (Customer Relationship Management), PLM (Product Lifecycle Management), and HRIS (Human Resources Information Systems)—are deployed effectively, operate smoothly, and are well integrated to maximize business value and process efficiency.

Key Activities & How to Accomplish Them:

2.1 Requirements Gathering & Stakeholder Alignment

- Engage department leads (Finance, HR, Manufacturing, Sales) to define system goals and data requirements.
- Map system functionality to business workflows.
- Define performance KPIs and compliance requirements (e.g., SOX, GDPR).

Work with regulatory frameworks and cross-functional teams—leverage your history with RSA Archer, Fusion Risk, and BIA/COOP engagements.

2.2 System Selection & Architecture Planning

- Lead evaluation or RFP process for selecting ERP, CRM, or PLM platforms (e.g., SAP, Salesforce, Oracle, Workday).
- Define integration architecture—on-prem, hybrid, or cloud—with secure API access and data standardization protocols.
- Ensure interoperability across platforms using middleware or integration frameworks.

Create Requirements Documents and lead vendor evaluation and AoA processes and integrated with broader IT ecosystems.

2.3 Deployment Planning & Execution

- Develop phased deployment roadmaps to minimize disruption.
- Consider using “Secure by Design” guidelines from DHS/CISA.
- Coordinate with DevOps and infrastructure teams to ensure systems are installed, configured, and security-hardened.
- Validate against project milestones, budget, and user training.

Implement CMDB and Infrastructure Management rollouts, and Novelis in-sourcing projects all qualify here.

2.4 Data Migration & Synchronization

- Ensure legacy data is cleansed, transformed, and migrated securely.
- Establish ETL pipelines or replication procedures to keep data consistent across platforms.
- Validate data integrity post-migration.
- Migrate to Post-Quantum Cryptography (PQC) to protect data.

Work with system migrations, configuration analysis, and compliance readiness directly to support this.

3 Support efficient Operations.

Support the efficient operation of software, simulation, and data acquisition systems in product R&D and manufacturing departments.

3.1 Objective Overview:

Ensure that the R&D and manufacturing teams have uninterrupted, optimized access to tools that power simulation, modeling, testing, and data collection—while maintaining performance, security, compliance, and integration across platforms.

Key Activities & How to Accomplish Them

3.2 Understand the Technical Environment and Use Cases

- Identify the software platforms used (e.g., CAD, MATLAB, LabVIEW, Ansys, engineering modeling tools).
- Define simulation workloads and real-time data acquisition needs in R&D and manufacturing.
- Document dependencies (network speed, sensor integrations, computing requirements).

Using high-performance systems, SDLC/SELC, and RTO/RPO planning makes you especially adept at understanding technical-critical workflows.

3.3 Build Scalable and High-Availability Infrastructure

- Implement edge or hybrid-cloud computing resources to support compute-heavy simulations.
- Ensure server/storage solutions meet low-latency, high-throughput needs (e.g., HPC clusters, SAN/NAS).
- Configure disaster recovery (DR) and fault tolerance for lab systems.

3.4 Optimize Data Acquisition and Integration

- Perform Data Sensitivity, naming, and lifecycle analysis.
- Integrate data acquisition systems with processing, visualization, and storage layers.
- Ensure secure, lossless collection of test/measurement data from lab or manufacturing floor devices.
- Enable automated ingestion pipelines for analytics dashboards and model validation.

Integrate CTEM, cloud observability, and AWS Inspector into DevOps pipelines positions to support this.

3.5 Ensure Security and Compliance

- Apply role-based access control (RBAC) and data governance to sensitive R&D data.
- Implement endpoint protection and audit trails for regulated industries (e.g., finance, pharma, aerospace).
- Use encryption and data classification frameworks to manage intellectual property securely.

IAM, Zero Trust, and cybersecurity compliance (PQC) are part of this skill set.

3.6 Coordinate Support Across Functions

- Establish an escalation process for simulation/system issues in collaboration with IT support and DevOps.
- Maintain a service desk knowledge base tailored to R&D tools.
- Deliver real-time monitoring and performance alerting using CloudWatch or OaC practices.

Running SRE playbooks, DevOps/Helpdesk collaboration, and documenting failover plans gives you strong grounding.

3.7 Drive Continuous Improvement

- Analyze logs and user feedback to improve system stability and responsiveness.
- Review license utilization and optimize vendor contracts (e.g., simulation software licensing).
- Evaluate new tools (AI-driven simulation, digital twins, edge AI) to keep pace with innovation.

Use AI agents, PQC, and digital transformation planning ensures you can align with next-gen R&D operations.

4 Integrate Unified Identity Management

Build a unified identity management (IAM), access control and IT security strategy to prevent network threats.

4.1 Objective Overview:

Create and implement a centralized, secure, and scalable identity and access management framework that protects digital assets, ensures compliance, and minimizes cyber risk across enterprise IT infrastructure.

Key Activities & How to Accomplish Them

4.2 Conduct a Security Posture and IAM Maturity Assessment

- Identify current IAM tools, policies, roles, access provisioning methods, and user authentication processes.
- Assess gaps against standards like NIST SP 800-63, ISO 27001, and Zero Trust Architecture (ZTA).
- Evaluate whether access is governed by RBAC, ABAC, or manual/legacy controls.

4.3 Designing a Unified Identity Architecture

- Establish a central directory (e.g., Azure AD, Okta, Ping) to federate and manage identities across platforms (on-prem, cloud, mobile).
- Standardize login experiences using Single Sign-On (SSO) and Multi-Factor Authentication (MFA).
- Implement least-privilege access and Just-In-Time provisioning.

4.4 Define and Enforce Policy-Based Access Controls

- Build and document access control models based on roles, departments, and risk sensitivity.
- Use automation to enforce access review cycles, entitlement revocation, and policy compliance.
- Monitor access to events using SIEM and alerting tools.

4.5 Secure Endpoint and Network Access

- Apply network segmentation and identity-aware firewalls.
- Enforce device compliance before granting access (e.g., mobile device management, posture checks).
- Integrate IAM with VPNs, VDI, and cloud gateways to enforce end-to-end policy.

4.6 Implement Continuous Monitoring and Threat Response

- Integrate IAM logs with CTEM or SIEM systems to flag abnormal access behaviors (e.g., privilege escalation, failed logins).
- Leverage threat intelligence to proactively block risky access patterns.
- Develop incident response workflows tied to IAM-triggered alerts.

4.7 Ensure Compliance and Audit Readiness

- Enable role attestation, segregation of duties (SoD), and traceable audit logs.
- Align policies with regulations such as HIPAA, SOX, GDPR, EO 14028, and SEC Rule 2023-139.
- Provide executive dashboards and documentation for audit support.

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5 Implement IT Project Management guidelines.

Lead IT project management and service delivery to ensure SLA, budget and progress are controlled and adhered to.

5.1 Objective Overview:

Effectively manage IT initiatives from inception through delivery by using structured project management methodologies and service frameworks to meet time, cost, scope, and quality targets, while aligning with stakeholder expectations and business goals.

Key Activities & How to Accomplish Them

5.2 Define Project Scope, Objectives & Deliverables

- Collaborate with stakeholders to gather and validate business requirements.
- Develop a detailed project charter with defined goals, deliverables, and success metrics.
- Break down initiatives into manageable work packages (WBS).

5.3 Establish Governance and Delivery Framework

- Select appropriate PM methodologies (Agile, Waterfall, Hybrid) based on project type.
- Define governance model: roles, responsibilities, escalation paths, and communication cadence.
- Develop baseline documents (Project Plan, Risk Register, RAID logs).

5.4 Create and Manage the Project Schedule

- Use Gantt charts or Agile boards to track tasks, milestones, dependencies, and critical paths.
- Apply Earned Value Management (EVM) to monitor cost vs progress.
- Adjust timelines based on risks, resource availability, and scope changes.

5.5 Control Budget and Resource Allocation

- Build and monitor a detailed budget (CAPEX/OPEX), forecasting resource needs.
- Ensure vendor contracts and service agreements align with delivery expectations.
- Identify variances early and implement corrective actions.

5.6 Track Service Delivery and SLA Compliance

- Monitor IT service delivery using SLAs, KPIs, and dashboards (e.g., ServiceNow, AWS CloudWatch).
- Establish incident response and escalation protocols tied to operational performance.
- Ensure alignment with ITSM and ISO 20000 standards.

5.7 Risk, Change, and Quality Management

- Maintain a dynamic risk register and perform impact assessments.
- Implement change control procedures and approval workflows.
- Conduct quality assurance checks and post-implementation reviews.

5.8 Stakeholder Communication and Reporting

- Provide weekly executive summaries on project status, risks, and mitigation.
- Facilitate steering committee meetings and cross-functional check-ins.
- Present dashboards visualizing timelines, SLA compliance, and earned value.

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6 Coordinate Daily Operations of Dev/Ops

Coordinate the daily operations of DevOps, IT support, system operation and maintenance, information security and data teams to ensure the delivery of production application where all components are at current release levels and free of KNOWN vulnerabilities.

6.1 Objective Overview:

Ensure operational excellence, security, and service reliability across all technical teams responsible for application delivery, infrastructure maintenance, user support, data integrity, and security enforcement—through cross-functional coordination, process standardization, and leadership oversight.

Key Activities & How to Accomplish Them

6.2 Establish Operational Governance and Team Alignment

- Define charters, roles, and interdependencies for each team (DevOps, IT support, SysOps, InfoSec, Data).
- Schedule regular coordination meetings (e.g., daily standups, weekly syncs) with clear agendas and KPIs.
- Align goals with SLAs, SLOs, and compliance targets.

6.3 Integrate Operational Tooling and Dashboards

- Centralize monitoring and observability using tools like AWS CloudWatch, ServiceNow, or Splunk.
- Implement shared dashboards for infrastructure health, CI/CD pipeline status, security alerts, and helpdesk trends.
- Enable real-time issue tracking across teams using ticketing and incident response systems.

6.4 Ensure Continuous Delivery and Infrastructure Stability

- Oversee CI/CD pipelines, build/test/release workflows, and application deployment cycles.
- Manage infrastructure as code (IaC) and automation for configuration consistency.
- Implement runbooks for system maintenance, failover, and DR procedures.

6.5 Maintain Endpoint, Server, and Data Security

- Coordinate vulnerability management, patching cycles, and hardening procedures across all systems.
- Ensure role-based access control (RBAC/ABAC), MFA, and Zero Trust policies are enforced.
- Use CTEM or SIEM to manage alerts, anomalies, and incident response coordination.

6.6 Streamline IT Support and Service Desk Integration

- Oversee service desk operations: escalation workflows, ticket prioritization, and knowledge base development.
- Align service desk metrics (MTTR, first-call resolution) with infrastructure and security support metrics.
- Enable automation and AI-assisted triage where feasible.

6.7 Foster Team Collaboration and Continuous Improvement

- Conduct retrospectives and root cause analysis (RCA) following incidents or failed deployments.
- Create a culture of knowledge sharing, documentation, and ongoing training.
- Encourage feedback loops between developers, infrastructure engineers, and data/security analysts.

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7 Optimize process collaboration, review, and improvement.

Continuously optimize remote collaboration, IT service desk, equipment assets and the software license management processes to ensure optimization of tools and reduction of toil and stress on staff.

7.1 Objective Overview:

Maintain elevated levels of productivity, security, and cost-efficiency across distributed teams by optimizing collaboration tools, modernizing IT service operations, streamlining asset management, and ensuring license compliance.

Key Activities & How to Accomplish Them

7.2 Modernize Remote Collaboration Infrastructure

- Standardize and secure video conferencing, document sharing, messaging, and virtual whiteboarding tools (e.g., MS Teams, Zoom, Miro, SharePoint).
- Integrate identity-aware access to collaborative environments (MFA, SSO).
- Enable bandwidth optimization and endpoint support for remote performance.

7.3 Enhance IT Service Desk Operations

- Implement or upgrade ITSM platforms (e.g., ServiceNow) for ticket management, automation, and analytics.
- Define SLA tiers and escalation paths for support tickets (hardware, software, access, etc.).
- Develop and maintain a knowledge base, FAQs, and automated triage workflows using AI/ML where feasible.

7.4 Streamline Equipment Asset Management

- Implement lifecycle tracking from procurement through deployment, support, and decommissioning.
- Maintain real-time inventory in a CMDB or asset database linked to ITSM tools.
- Track device assignment, condition, location, and refresh schedules across distributed teams.

7.5 Control and Optimize Software License Management

- Monitor usage vs. license entitlements using tools like Flexera, Lansweeper, or custom dashboards.
- Centralize purchasing, renewals, and compliance tracking.
- Identify underutilized licenses and reassign or retire them to control cost.

7.6 Implement Continuous Improvement Practices

- Conduct regular reviews of help desk metrics (MTTR, ticket volume, resolution rate), asset utilization, and software audit logs.
- Collect user feedback on collaboration and IT service experiences.
- Use dashboards and heatmaps to identify inefficiencies and opportunities for automation.

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8 Tracking Emerging Technologies

Track emerging technology trends (such as edge computing, AI Ops, Industrial Internet of Things, Post-Quantum Cryptography) and evaluating the feasibility of implementation of new and emerging technologies.

8.1 Objective Overview:

Continuously monitor advancements in emerging technologies and assess their relevance, maturity, and return on investment for the enterprise. Deliver strategic recommendations and pilot implementations that align innovation with organizational goals and operational needs.

Key Activities & How to Accomplish Them

8.2 Establish a Technology Scanning Framework

- Build a structured process to monitor innovation categories: edge computing, AI Ops, IoT, PQC, quantum security, agent-based AI, etc.
- Subscribe to research publications (e.g., Gartner Hype Cycle, Forrester, NIST, IEEE).
- Network with vendors, startups, and standards bodies (e.g., CSA, Open Group, NIST PQC initiatives).

8.3 Assess Technical Maturity and Market Adoption

- Analyze maturity models (e.g., Technology Readiness Level) and vendor roadmaps.
- Evaluate technical dependencies, integration requirements, and scalability.

- Track regulatory direction, especially in sensitive fields (cybersecurity, pharma, critical infrastructure).

8.4 Evaluate Feasibility for Your Environment

- Conduct internal readiness assessments (infrastructure compatibility, skillset gaps, regulatory constraints).
- Run cost-benefit and risk analysis tailored to business impact.
- Develop and document use cases aligned with department or business unit needs.

8.5 Run Proofs of Concept (PoCs) and Pilots

- Stand up sandbox or pilot environments to assess real-world viability.
- Measure against KPIs: performance, security, user experience, cost savings, or resilience.
- Capture lessons learned and constructed an enterprise recommendation or scaled roadmap.

8.6 Develop Strategic Recommendations

- Present findings to executive leadership using clear risk/reward language.
- Identify adoption timelines and required organizational changes (training, budget, partner engagement).
- Embed recommendations into enterprise architecture roadmaps or resilience plans.

9 Build and implement a Data Governance Framework

Build a data governance framework and work with data analysis/AI teams to enhance the value of data assets, while ensuring adherence to laws, regulations, and guidelines.

9.1 Objective Overview:

Establish a formal structure to classify, secure, and manage enterprise data assets, ensuring data quality, accessibility, compliance, and ethical AI use. Collaborate with analytics and AI teams to transform raw data into actionable insights and competitive advantage.

Key Activities & How to Accomplish Them

9.2 Define a Data Governance Strategy

- Establish guiding principles for data ownership, stewardship, and accountability.
- Create a governance charter covering data lifecycle, usage, security, and compliance.
- Identify data domains and assign roles (Data Owner, Steward, Custodian).

9.3 Implement Data Classification and Metadata Management

- Classify data by sensitivity and purpose (e.g., PII, PHI, IP, operational, analytical).
- Use metadata tagging, cataloging, and lineage tracking tools (e.g., Collibra, Informatica, Alation).
- Define retention and disposal policies for each data class.

9.4 Aligning Data Governance with Security & Compliance

- Enforce access controls, encryption, and monitoring for data at rest, in motion, and in use.
- Map governance to frameworks like ISO 27001, NIST 800-53, GDPR, HIPAA, and EO 14028.
- Enable audit trails and data subject rights management (for privacy compliance).

9.5 Collaborating with Data Analytics and AI Teams

- Provide clean, accessible, and well-documented data pipelines for analysis and model training.
- Validate data quality metrics (completeness, consistency, accuracy).
- Ensure transparency and accountability in AI/ML models (bias detection, explainability, compliance).

9.6 Drive Value Realization from Data Assets

- Identify high-value data sources for decision-making, automation, or product development.

- Build dashboards and visualizations that track KPIs, data lineage, and quality over time.
- Use AI/ML and predictive analytics to extract business insights.
