

Common Pitfalls in Infrastructure Projects and How to Avoid Them

Infrastructure projects are the unsung heroes of IT—laying the groundwork for everything from cloud adoption to enterprise security. But despite their critical importance, infrastructure initiatives are notoriously prone to delays, scope creep, and cross-team misalignment.

Why? Because infrastructure projects deal with high-risk systems, complex dependencies, and often involve both legacy tech and modern platforms. If not managed carefully, even a simple configuration update can cascade into unplanned downtime or costly rework.



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The Infrastructure Project Challenge



Complex Dependencies

Deeply interconnected components where changes can cascade across systems



High Risk

Critical systems where downtime equals business impact



Cross-Team Coordination

Multiple teams with different priorities and schedules



Compliance Requirements

Strict regulatory and security standards that must be met

Infrastructure projects require navigating a complex landscape where technical, organizational, and compliance challenges intersect. Success depends on understanding these unique characteristics and implementing strategies to address them proactively rather than reactively.





Underestimating the Complexity of Dependencies



Identify Dependencies

Map all interconnections between network, storage, security, and applications



Visualize Architecture

Create comprehensive diagrams with SME validation



Schedule Pre-milestone Reviews

Regular checkpoints to verify prerequisites are met



Test in Isolation

Validate changes in a controlled environment before production

Infrastructure components are deeply interconnected—what affects the network can impact storage, security, or application uptime. One missed dependency can derail the project timeline and cause cascading failures throughout the system.

Creating a detailed dependency matrix early in the project helps identify critical path elements and potential bottlenecks before they become issues.

Inadequate Change Management

1 Change Request Creation

Document proposed changes, impact analysis, and rollback plan

2 Technical Review

Peer review by SMEs to validate approach and identify risks

3 Change Board Approval

Formal approval from Change Advisory Board (CAB)

4 Implementation

Execute during approved maintenance window with stakeholder notification

Infrastructure changes often require change board approvals, maintenance windows, and stakeholder notification. Skipping or delaying this process can result in rollout delays or production outages that impact the entire organization.

Successful project managers incorporate change management timelines into their project plans from the start, aligning sprint or task completion with CAB submission dates to prevent bottlenecks.



Poor Communication Across Teams



Weekly Cross-functional Status Calls

Regular touchpoints with all stakeholders to share updates, address blockers, and align on priorities



Collaborative Communication Tools

Use tools like Confluence, Teams, or Slack for real-time visibility and documentation



RAID Log Maintenance

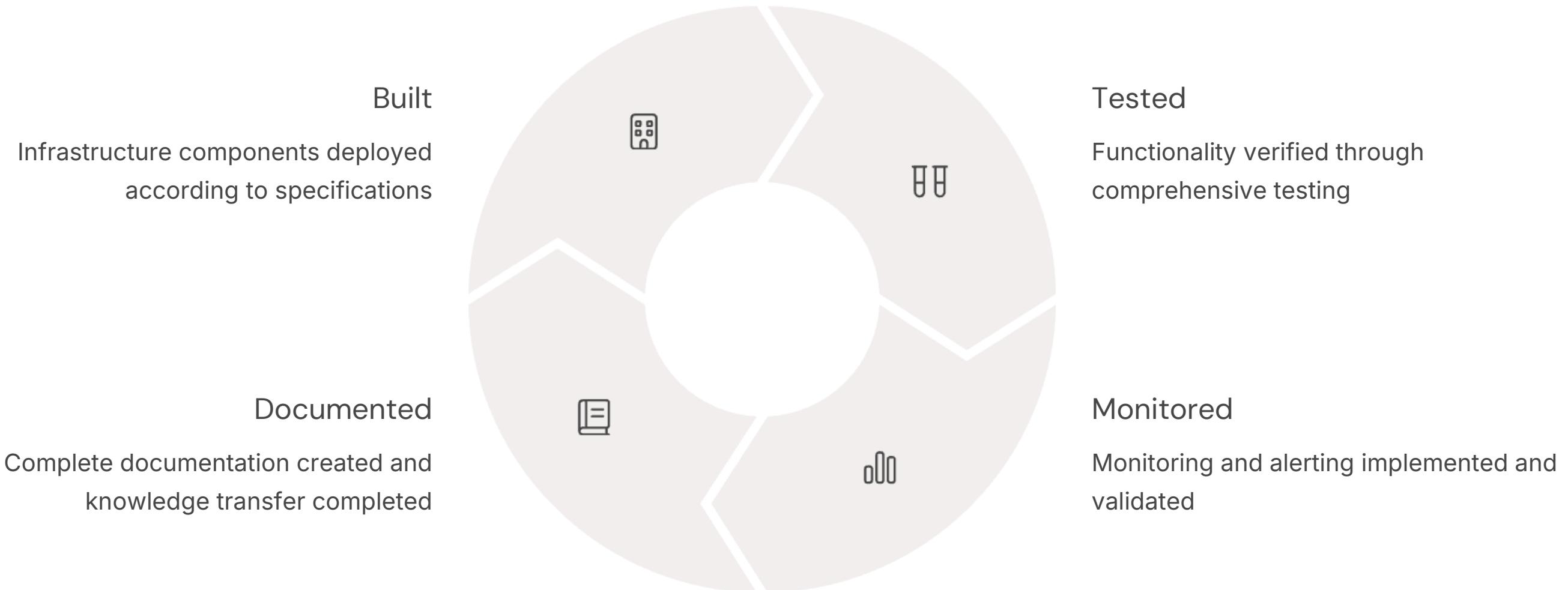
Track Risks, Assumptions, Issues, and Dependencies in a central location accessible to all teams

Infrastructure projects typically span multiple departments—network, cloud, InfoSec, operations, and more. Without a comprehensive communication plan, critical updates can get lost and important tasks may fall through the cracks.

Establishing clear channels for both formal and informal communication helps break down silos and ensures that all team members have visibility into project status and upcoming work.



No Clear Definition of Done



Unlike software releases, infrastructure deliverables often lack a clear-cut "done" state—leading to confusion, rework, or misaligned expectations between teams and stakeholders.

Defining explicit completion criteria for each infrastructure component provides clarity and ensures that nothing is overlooked. Requiring formal sign-offs for each phase—provisioning, configuration, validation, and handover—creates accountability and confirms that all requirements have been met.

Neglecting Security and Compliance Early On



Security by Design

Include InfoSec from project kickoff



Security Requirements

Document and prioritize security controls



Scheduled Assessments

Plan security reviews as project milestones



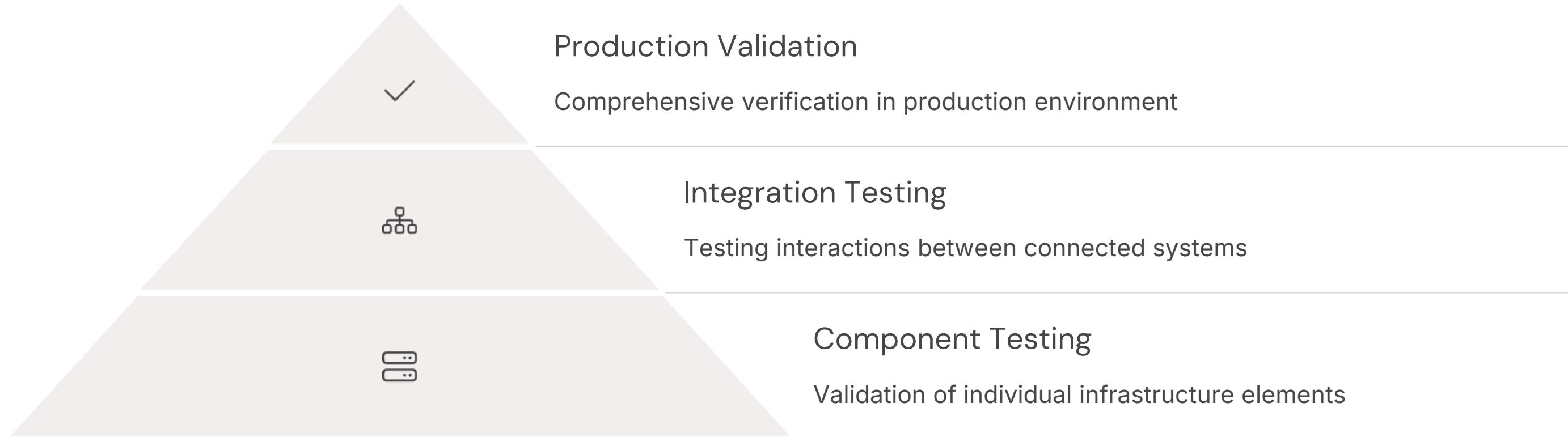
Compliance Validation

Verify all regulatory requirements are met

Security reviews and compliance audits can significantly delay go-lives if they're introduced too late in the process. Last-minute security findings often require architectural changes that are costly and time-consuming to implement.

Proactive project managers involve InfoSec and compliance stakeholders from the kickoff stage and schedule security assessments as formal project milestones rather than treating them as post-go-live considerations.

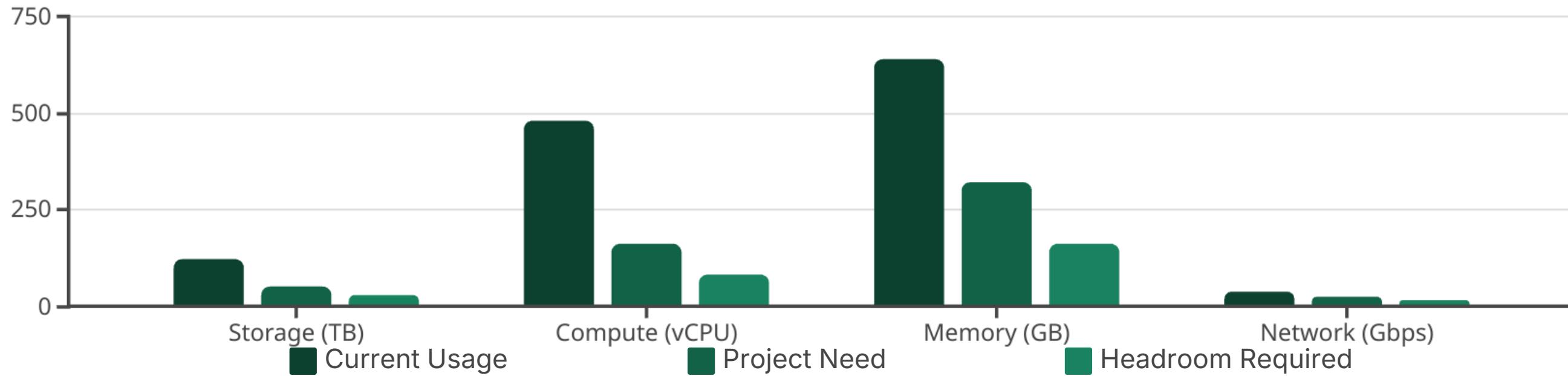
Inadequate Testing Strategies



Infrastructure testing is often limited to basic functionality checks rather than comprehensive scenarios that mirror real-world usage and failure conditions. This leads to unexpected issues during production cutover that could have been identified earlier.

Effective infrastructure projects implement a layered testing approach that includes component testing, integration testing, and production validation. This should include failure testing to verify system resilience and recovery procedures. Creating detailed test plans with explicit pass/fail criteria ensures thorough validation before go-live.

Insufficient Capacity Planning



Many infrastructure projects fail to accurately forecast resource requirements, leading to performance issues or expensive mid-project upgrades. Growth projections are often overly optimistic or fail to account for seasonal variations and maintenance overhead.

Successful capacity planning requires analyzing historical usage patterns, understanding business growth plans, and accounting for both peak loads and future expansion. Including a minimum 20-30% headroom beyond calculated requirements provides buffer for unexpected growth and prevents resource constraints.

Overlooking Operational Readiness

Runbooks & SOPs

Detailed procedures for routine operations, maintenance, and troubleshooting

- Daily checks
- Backup procedures
- Troubleshooting guides

Monitoring & Alerting

Comprehensive monitoring strategy with meaningful alerts

- Performance metrics
- Availability checks
- Capacity thresholds

Knowledge Transfer

Formal training and documentation for operations teams

- Architecture overview
- Hands-on training
- Escalation procedures

Project teams often focus so heavily on building infrastructure that they neglect operational readiness—the procedures, documentation, and knowledge transfer needed for ongoing support. This creates a rocky transition to operations and potential service disruptions.

Developing operational materials in parallel with implementation ensures a smooth handover. Including operations team members throughout the project lifecycle builds familiarity and ownership before the formal transition occurs.

Incomplete Disaster Recovery Planning

1

Risk Assessment

Identify critical systems and potential failure scenarios. Calculate impact using metrics like Recovery Time Objective (RTO) and Recovery Point Objective (RPO).

2

Recovery Strategy

Develop detailed recovery procedures for each failure scenario. Document step-by-step recovery process, resource requirements, and team responsibilities.

3

Testing & Validation

Conduct regular DR drills to validate recovery procedures and train team members. Update documentation based on test findings and lessons learned.

Disaster recovery is often treated as an afterthought, with vague recovery plans that haven't been tested under realistic conditions. When an actual disaster occurs, these untested plans frequently fail or take far longer than expected to execute.

Effective disaster recovery planning includes a thorough risk assessment, detailed recovery procedures, and regular testing. DR plans should be living documents that evolve as infrastructure changes, with testing results informing continuous improvement.

Resource Constraints and Burnout



Workload Management

Infrastructure teams are often stretched thin across multiple priorities. Track team capacity and be realistic about what can be accomplished within timeframes. Buffer schedules to account for interruptions and support duties.

Infrastructure teams often face unrealistic timelines with insufficient resources, leading to burnout and quality issues. The 24/7 nature of infrastructure support combined with project demands creates significant stress on team members.

Successful project managers act as advocates for their teams, ensuring realistic resourcing and pushing back on unreasonable timelines. Building resilience through cross-training and knowledge sharing prevents bottlenecks and reduces pressure on key individuals.

Knowledge Sharing

Avoid single points of failure by cross-training team members on critical systems. Create opportunities for skill development and mentoring to build depth of expertise across the team.

Team Wellbeing

Recognize signs of burnout and take proactive steps to address workload issues. Celebrate milestones and acknowledge contributions to maintain team morale through challenging projects.

Key Takeaways for Infrastructure Project Success

1

Start with Architecture

Comprehensive mapping of dependencies and interfaces

2

Integrate Change Management

Embed approval processes in project timeline

3

Prioritize Security Early

Include InfoSec from day one, not as an afterthought

4

Build Operational Readiness

Prepare for transition to operations throughout the project

Infrastructure projects can't afford to be treated like an afterthought—they demand the same rigor, visibility, and agility as software initiatives. As a project manager, your role is to **anticipate risks, align stakeholders, and enforce structured delivery** across a traditionally waterfall-prone environment.

By avoiding these common pitfalls and applying proactive strategies, you'll ensure your infrastructure project delivers what matters most: **reliability, scalability, and continuity**. The success of these foundational elements enables all other IT initiatives to thrive.