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Horizon architecture: The hidden superpower for adapting to change and winning in the market

Part 3

Developing comprehensive architecture roadmaps
using the horizon architecture framework

Contents

Monitor Deloitte

We collaborate with the C-Suite to sense possible futures for the enterprise and develop a strategy to increase the odds of transformative success. We lead with value and our deep sector insights, and backstop with the real-world experiences of implementing the change. Our practice is comprised of an integrated cohort of specialists across business, technology, AI, and data strategy. Our frameworks bring the integrated choices (and outcomes) early to any conversation, and our AI-powered methods accelerate time to action.

Whether the answer is a new business model, expanded market access, AI-fueled reinvention, or a refactored technology estate, our all-domain strategy consultancy is ready to help you re-imagine your horizons.

Executive summary

Architectural excellence represents a critical enabler of business growth and strategic achievement. Historically under-appreciated, the maturity and sophistication of digital and enterprise architecture now serve as essential foundations for translating business strategy into market-leading outcomes.

To unlock this potential, we introduced the Horizon Architecture (HA) framework—a strategic approach designed to integrate business goals seamlessly with enterprise and technology architecture. Rather than merely optimizing technology landscape, HA positions architecture as a strategic amplifier, ensuring technological investments directly reinforce the business vision.

The framework provides executives with a structured methodology to:

- Clearly articulate the business North Star and translate it into architecturally aligned initiatives (including AI and data initiatives).
- Diagnose existing technology challenges and identify future-ready solutions.
- Prioritize initiatives strategically, targeting critical domains and functions.
- Construct actionable roadmaps that resonate with C-suite stakeholders, securing organization-wide alignment and accelerating execution.

By linking architectural maturity directly to strategic clarity, Horizon Architecture empowers organizations to confidently chart their path toward sustained competitive advantage and impactful business outcomes.

Horizon architecture is defined as technology architecture that exhibits a thoughtful, intentional and value-oriented configuration across the different layers of architecture. This configuration is pragmatically unlocked by leveraging eight key characteristics to enable the organization to change and win effectively in the marketplace.

In part 1 of the Horizon Architecture series, we discussed how architecture excellence has become a critical organizational imperative and an important board and C-suite discussion topic. We outlined eight architecture characteristics which when matured can bolster an organization's capacity to respond to business changes and ability to win in a competitive market. (figure 1).

Figure 1. Horizon architecture characteristics to measure future-readiness:

1. **Actively governed**
   Providing executive oversight and processes to maintain integrity, security, and performance.
2. **Nimble**
   Adapting as quickly as possible to changing business priorities.
3. **Lean**
   Reducing complexity and actively shedding what's no longer needed.
4. **Resilient & stable**
   Ensuring appropriate level of performance and security despite change.
5. **Loosely coupled**
   Avoiding limitations or restrictions due to past decisions.
6. **Interoperable**
   Enabling ecosystems that function seamlessly and prevent lock-in.
7. **Innovation**
   Operating within a system that allows for rapid innovation.
8. **Scalable**
   Improving growth potential at decreased marginal cost.

8 CHARACTERISTICS OF HORIZON ARCHITECTURE

The ability to score highly on these eight characteristics results in heightened business and technology alignment, but not every characteristic may necessarily apply to every organization.

In part 2 of the series, we outlined a simple four-step proces (figure 2) that organizations can use to develop and anchor their architecture roadmaps for the future, starting with identifying the characteristics that are most important to them.

In this article, Part 3, we expand on steps two through four: with new insight related to how organizations can assess their architectural maturity, identify the relevant architecture characteristics that need to be matured, and lay out a comprehensive and integrated architecture roadmap that can help drive market success. We emphasize real-world industry examples that connect IT investments with business strategy to deliver value at speed, giving leaders actionable examples to guide their architectural modernization journeys.

Figure 2. Horizon architecture four-step journey

01 Identify and prioritize the characteristics that are most important to the enterprise

02 Evaluate the current-state architecture using our maturity scale

03 Explore and strategize on how to enhance relevant characteristics that have not yet reached the highest level of maturity

04 Develop a Horizon Architecture roadmap to kick-start the journey

Recap of Step 1 – Identify and prioritize architecture characteristics

The horizon architecture approach starts with understanding the eight characteristics in figure 1 (page 4). ***While it may not be practical or necessary to mature all eight simultaneously, a deliberate, focused effort is required to identify and prioritize those most pertinent to the strategic context of the organization.*** Multiple factors such as the existing technology landscape, ongoing transformation efforts and business goals—and all informed by both business and IT leaders—can influence which characteristics to focus more or less on in any specified timeframe.

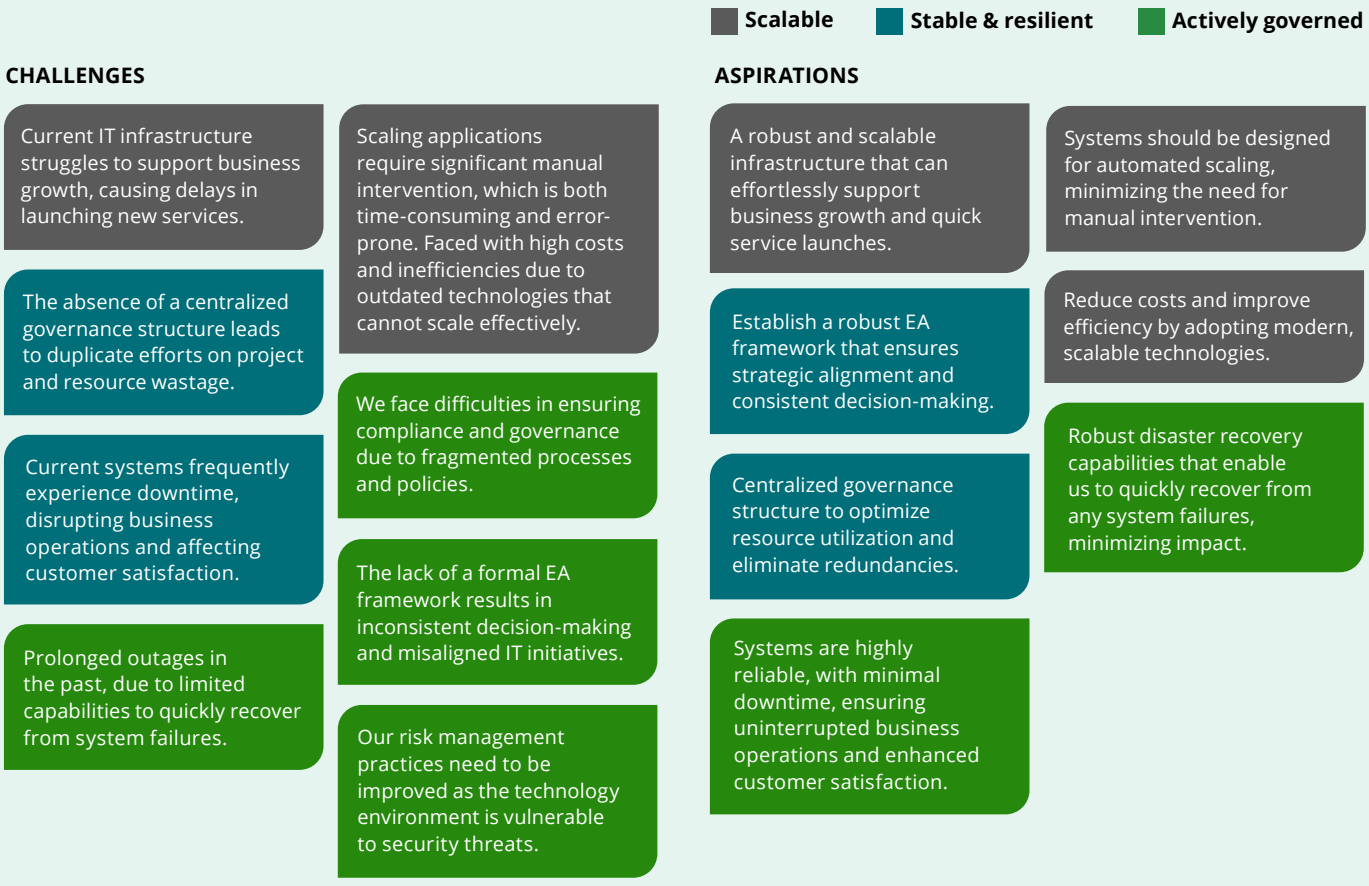
Case study 1 (see next page) details a notable example of how a regional bank holding company identified and prioritized which architectural characteristics were most relevant to advancing its strategy. Engaging key leaders from both business and IT in this exercise helped ensure the appropriate prioritization of the architecture characteristics that then needed to be matured.

Case study: Regional Bank Holding Company
Step 1: Identify and prioritize architecture characteristics

A regional bank holding company with over $86B in AUM (assets under management) and $3B+ in revenue, and one of the largest banks in the US, underwent its annual regulatory audit and compliance evaluation per the Federal Financial Institutions Examination Council's guidelines. The audit found significant gaps, which exposed the bank to financial penalties, potential lawsuits, and reputational risk. The penalty, in combination with heavy reliance on outdated, near end-of-life, on-premises technologies, prompted a comprehensive transformation journey.

The bank aimed to mature its enterprise architecture (EA) function to serve as an overarching mechanism for governance and oversight while also establishing new, modern guardrails to optimize its application portfolio based on architectural friction points identified through workshops (figure 3).

Figure 3. Challenge and aspiration assessment

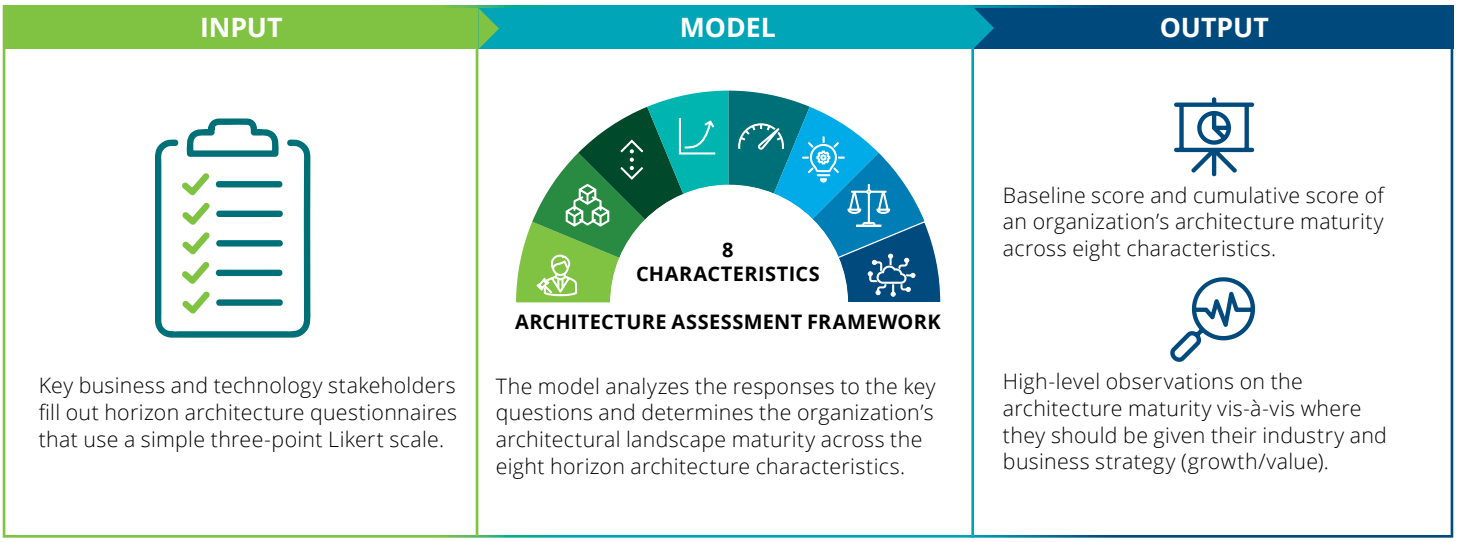


The bank prioritized three horizon architecture characteristics: **scalable**, **stable and resilient**, and **actively governed**. This empowered its leaders with a focused objective that could then be measured and managed,

Step 2 – Assess the current-state architecture to establish a baseline

After identifying the characteristics that are most important, Step 2 involves a detailed assessment of the company's current-state architecture to establish a baseline across all architecture layers, including user experience, business processes, applications, data, security, integrations, and infrastructure. A high-level assessment framework is shown in figure 4.

Figure 4. Horizon architecture assessment framework



Source: Deloitte Consulting

An organization can then evaluate its architectural maturity through a series of targeted business and technology questions that aim to identify strengths and areas for improvement in relation to each of the framework's characteristics (figure 5).

Based on the responses, organizations can calculate a baseline score for each characteristic (categorizing each as either low, medium, or high maturity) and use that score to benchmark and advance their cumulative architecture maturity across the eight key characteristics.

Figure 5. Sample architecture maturity assessment questionnaire

#	HA Characteristics	Representative question
1	**Actively governed**	How does the organization ensure that the technology portfolio and architecture decisions are aligned to business strategy?
2	**Nimble**	How rapidly can your organization's technology landscape respond to shifting business demands—such as entering new markets, complying with evolving regulations, or adapting to economic and political disruptions?
3	**Lean**	How recently has your organization conducted a comprehensive analysis of its technology estate—including identifying redundancies through mapping technologies against business capabilities—to clearly understand how effectively your technology landscape supports critical business needs?
4	**Resilient & stable**	Do you leverage a tiering system for your applications to align with the business continuity and disaster recovery (BCDR) pattern, metrics and application service-level agreements (SLAs)?
5	**Loosely coupled**	Is your application architecture monolithic by design or is there a plan to decouple services strategically?
6	**Interoperable**	How modular and portable is your application architecture—are your key data elements managed through enterprise-aligned, decoupled systems of record?
7	**Innovation**	Is there a mechanism to allocate funding for driving innovation at your organization? How does value articulation and realization happen for driving innovation?
8	**Scalable**	How modular and portable is your application architecture—are your key data elements managed through enterprise-aligned, decoupled systems of record?

Source: Deloitte Consulting

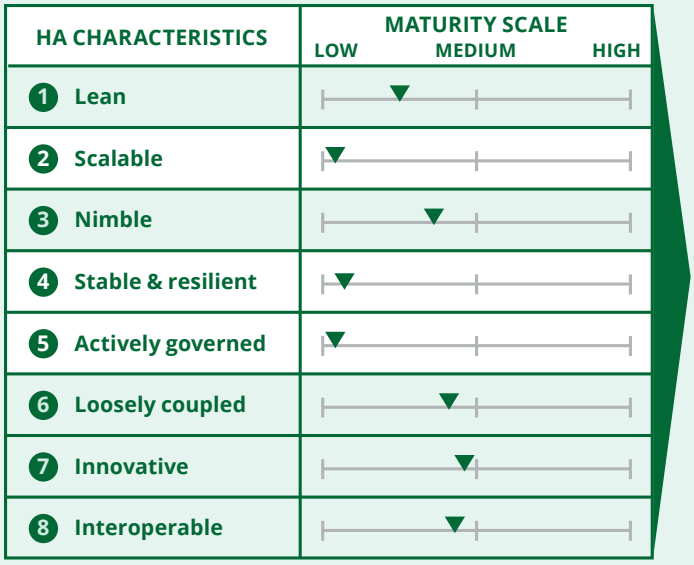
Case study: Regional Bank Holding Company
Step 2: Assess the current-state architecture to establish a baseline

For the bank referenced in Step 1, the absence of a formal architecture governance framework, coupled with the prevalence of shadow IT and siloed IT functions within each business unit, was evident. This lack of cohesiveness across the organization was leading to several negative issues, including the accumulation of technical debt and a lack of standardization and conformity in solutions.

The bank's existing architecture was ill-equipped to support its growth aspirations. The outdated technologies in use were not designed to handle increased workloads efficiently, and that was leading to performance bottlenecks and high operational costs. The assessment found the bank had no technology landscape modernization plan plus significant on-premises application sprawl, and was operating at a **low** maturity l evel across the three characteristics: **scalable**, **stable and resilient**, and **actively governed**.

These gaps highlighted the urgent need for concerted efforts to mature its enterprise architecture, optimize its application portfolio, and migrate to cloud-based solutions.

Figure 6. Current-state assessment across eight HA characteristics



KEY CALLOUTS FROM STAKEHOLDER INTERVIEWS

Scalable
- "Technical debt hinders innovation and consumes resources."
- "Maintaining legacy systems is resource-intensive and error-prone."
- "Scaling is inefficient and costly with outdated technologies."

Stable and resilient
- "IT solutions don't meet business needs, causing inefficiencies."
- "Frequent system downtimes disrupt business operations."
- "Inconsistent processes increase complexity."

Actively governed
- "No formal enterprise architecture framework, causing inconsistency."
- "Shadow IT bypasses governance, leading to security risks."
- "Absence of a centralized governance structure leads to duplicate efforts."

Key horizon architecture considerations for GenAI solutions

One practical requirement facing many organizations today is how to assess and advance their architectural maturity for AI applications, as AI reshapes products and services across sectors, introduces new AI tools, and demands increasingly robust, scalable, and resilient architectures.

Here, many of the same architectural principles apply, though there will be a greater emphasis on key aspects such as AI infrastructure and AI applications. For example: For AI infrastructure, high performance GPUs (graphics processing unit) and TPUs (tensor processing units) to meet computational demands, will become critical. These will be hybrid infrastructure architectures that combine on-premises, Cloud, NCP (network control protocol), and Edge resources across connected workflows. Similarly, from an AI applications architecture standpoint, application programming interfaces (APIs) that allow systems to interact smoothly with other applications and a microservices architecture that enhances flexibility will be essential components to manage the flow of data.

HA provides a structured framework to evaluate architecture from multiple lenses and identify relevant, priority initiatives. The framework supports scalability, and reliability also drives innovation as well as active governance, enabling businesses to stay competitive and forward-thinking in a rapidly evolving landscape. HA encapsulates all the aspects of AI solutioning into the existing technology landscape of the organization. By integrating HA principles into the design and development of AI solutions, organizations can build on a solid foundation and realize incremental value from AI.

Step 3 – Plan how to improve architecture toward higher levels of maturity

Once architectural maturity is measured, organizations can define the outcome-focused initiatives and milestones that can help them translate their target state objectives into realizable ambitions (figure 7).

The actual initiatives an organization prioritizes will depend on factors such as its business goals (enterprise, business unit, or function level), technology strategy, execution effort, and execution risk.

Figure 7. Illustrative list of initiatives to improve maturity of horizon architecture characteristics

Sample initiatives Clearly defined actions or projects that need to be undertaken to address the focus areas aimed at enhancing architectural maturity	HA characteristic(s)						
	Lean	Scalable	Nimble	Resilient & secure	Actively managed	Loosely coupled	Innovative & interoperable
Develop an integrated structure for better coordination between overall technology governance and architecture governance forums					●		
Build using an agile development approach with focus on delivering continuous incremental value and allowing for rapid feedback			●				
Implement integrated initiatives such as zero trust architecture, endpoint detection and response (EDR) solutions, and network segmentation to bolster defenses against cyberthreats				●			
Implement enterprise architecture management (EAM) and configuration management database (CMDB) tools to automate data collection and cataloging, visualize dependencies, and improve reporting capability		●					
Strengthen the enterprise architecture function to create comprehensive architecture models and documentation that provide a holistic view of all technology assets, their interdependencies and alignments to business processes				●			●
Develop an AI assessment framework that will evaluate and prioritize potential use cases on feasibility, impact, investment requirements, and governance and compliance requirements					●		●
Increase modularity and componentization through microservices and API-based architecture to isolate risks and any system failure				●		●	
Adopt cloud-native technologies and infrastructure services to build scalable and resilient applications at lower cost		●		●			
Develop and maintain a business continuity and disaster recovery plan that outlines procedures for maintaining operations during and after a disruption; implement redundancy and failover mechanisms				●	●		

Case study: Regional Bank Holding Company
Step 3: Plan how to improve architecture toward higher levels of maturity

The regional bank launched a collaborative effort across its business and technology teams to identify initiatives that would improve architecture governance, optimize the application portfolio, and develop a comprehensive cloud migration strategy, including detailed wave planning.

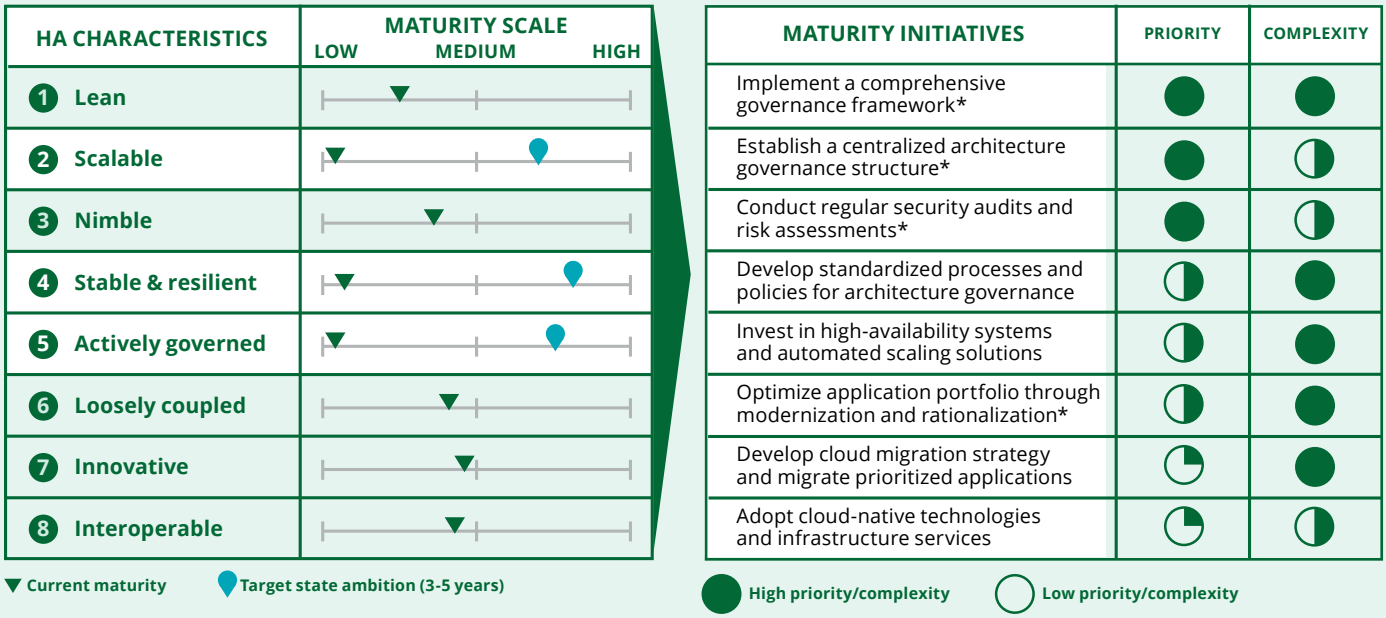
The collaborative approach highlighted interdependencies among planned and in-flight initiatives, and opportunities to replicate and standardize successful initiatives.

The bank aimed to:

1. Implement a comprehensive governance framework
2. Establish a centralized IT governance structure
3. Conduct regular security audits and risk assessments
4. Develop standardized processes and policies for IT governance
5. Invest in high-availability systems and automated scaling solutions
6. Optimize its application portfolio through modernization and rationalization
7. Develop a cloud migration strategy and migrate prioritized applications
8. Adopt cloud-native technologies and infrastructure services

The expected outcome: a more stable, scalable, and resilient IT environment aligned with business goals.

Figure 8. Desired state of maturity and identified set of initiatives to get there



Applying Deloitte's tech-agnostic horizon architecture framework to drive business impact with advanced architecture management solutions

Advanced architecture management solutions (LeanIX, Orbus, Ardoq, Abacus [these are only examples and not recommendations]) are revolutionizing how organizations manage their architectural landscapes. (Gartner MQ Report 2024) These tools offer comprehensive features that streamline the management of architectural artifacts, provide real-time insights, and facilitate collaboration across teams. A growing number of organizations are focused on implementing and adopting Architecture Management Solutions to support their digital transformation efforts. (Gartner Report 2024)[1] These tools offer comprehensive features that streamline the management of architectural artifacts, provide real-time insights, and facilitate collaboration across teams. A growing number of organizations are focused on implementing and adopting Architecture Management Solutions to support their digital transformation efforts.[2]

The reasons for this success stem from the various functions that these tools can provide to support an organization's HA journey. For instance, a mature architecture management solution can facilitate detailed modeling and analysis to identify redundancies and streamline operations—ensuring a lean architecture. That then supports scalability through resource management and capacity planning, while agile modeling and real-time updates enable quick adaptation to changing business priorities.

Stability and resilience are bolstered by measures around risk management, performance monitoring, and integrated security. Governance frameworks and audit trails within these solutions ensure active governance, while modular design and dependency management promote a loosely coupled architecture, avoiding vendor lock-in.

Furthermore, architecture management solutions drive innovation by managing projects from ideation to implementation, supporting prototyping and simulation, and analyzing emerging trends. They enhance interoperability through adherence to industry standards, integration platforms, and standardized data exchange formats. By leveraging these tools effectively, organizations can increase their architecture maturity across any or all of the eight characteristics.

By coupling architecture management solutions with the horizon architecture framework, organizations can achieve a more mature, efficient, and resilient architecture that connects across the enterprise.

This can lead to significant business impacts such as increased operational efficiency through streamlined processes and improved resource utilization, and better strategic alignment between IT and business to ensure technology investments directly support business goals. This approach not only supports strategic objectives but also drives continuous improvement and competitive advantage.

Step 4 – Collaboratively develop architecture roadmaps

The final step is developing integrated and comprehensive architecture roadmaps that incorporate HA architecture maturity enhancement initiatives along with other business capability enhancement initiatives required by the organization. Organizations may choose to develop roadmaps by function, capability area, business unit, or other relevant grouping. It is important that the horizon architecture assessment and prioritizations are conducted ***within and across*** groups to enable a set of holistic, integrated architecture roadmaps.

There are many approaches and tools organizations can consider when developing architecture roadmaps. This exercise requires the active engagement of business teams and technology leaders. ***Based on our experience, we recommend teams start small by considering a few high-value HA characteristics, identifying the associated initiatives, and building momentum over time.*** Once the process is in motion, extend and replicate the exercise.

Additionally, architecture management solutions can revolutionize how organizations manage their architectural landscapes. These tools offer comprehensive features that streamline the management of architectural artifacts, provide real-time insights, and facilitate collaboration across teams, including modeling and analysis to identify redundancies and streamline operations, ensuring a lean architecture. Ultimately, they support scalability through active governance and modular design from ideation to implementation.

Whatever an organization's approach, after identifying the key business-aligned initiatives to improve architecture maturity, it is crucial to develop a sequenced roadmap for implementation that factors interdependencies across the various architecture groups, workstreams, and initiatives (figure 9).

Given the dynamic nature of most organizations' technology landscapes and evolving business strategies and goals, it is recommended to continue these assessments at least on an annual or biannual basis. We now turn back to the same bank's journey for a tangible example of collaboratively developing the architecture roadmap.

Source: Deloitte Consulting

Figure 9. HA-inspired architecture roadmap

Capability area	Initiative	0-6 months	6-12 months	12-18 months
Enterprise governance	Develop an integrated structure for better coordination between overall technology governance and architecture governance forums	Assess current governance structures Define roles, responsibilities & forums	Define roles, responsibilities & forums	Monitor and optimize governance processes
Application development	Build in an agile development approach with focus on delivering continuous incremental value and allowing for rapid feedback	Conduct agile maturity assessment Roll out agile training and coaching	Pilot agile delivery with selected teams Design agile practices enterprise-wide	
Cybersecurity	Implement integrated initiatives such as zero trust architecture, endpoint detection and response (EDR) solutions, and network segmentation to bolster defenses against cyber threats	Define zero trust strategy & EDR requirements Deploy EDR tools and network pilot	Implement zero trust framework	
IT asset management	Implement enterprise architecture management (EAM) and configuration management database (CMDB) tools to automate data collection and cataloging, visualize dependencies, and improve reporting capability	Select and procure EAM & CMDB tools Implement the EAM foundation across the organization	CMDB foundational layer	Implement CMDB foundational layer Integrate CMDB with EAM tool
Enterprise architecture	Strengthen the EA function to create comprehensive architecture models and documentation that provide a holistic view of all technology assets, their interdependencies and alignment, to business processes	Baseline CMDB architecture Build detailed models for critical domains	Link architecture to business processes	Set up continuous EA governance
Data & AI governance	Develop an AI assessment framework that will evaluate and prioritize potential use cases on feasibility, impact, investment requirements, and governance and compliance requirements	AI use case opportunities Build AI assessment criteria & scoring model	Pilot the framework on a few use cases	Finalize framework and scale across business units
Application architecture	Increase modularity and componentization through microservices and API-based architecture to isolate risks and any system failure	Identify AI use case opportunities Deploy EDR tools and network segmentation pilots Establish API governance standards	Expand microservices architecture enterprisewide	
Cloud infrastructure	Adopt cloud-native technologies and infrastructure services to build scalable and resilient applications at lower cost	Assess current workloads for cloud-native readiness Implement cloud-native development tools and practices Migrate/refactor applications to cloud native	Optimize cost and performance	
Business continuity management	Develop and maintain a business continuity and disaster recovery plan that outlines procedures for maintaining operations during and after a disruption; implement redundancy and failover mechanisms	Conduct BCP and DR gap assessment Draft new BCP and DR strategies	Implement redundancy and failover mechanism	Test and update BCP/DR plans regularly

Source: Deloitte Consulting

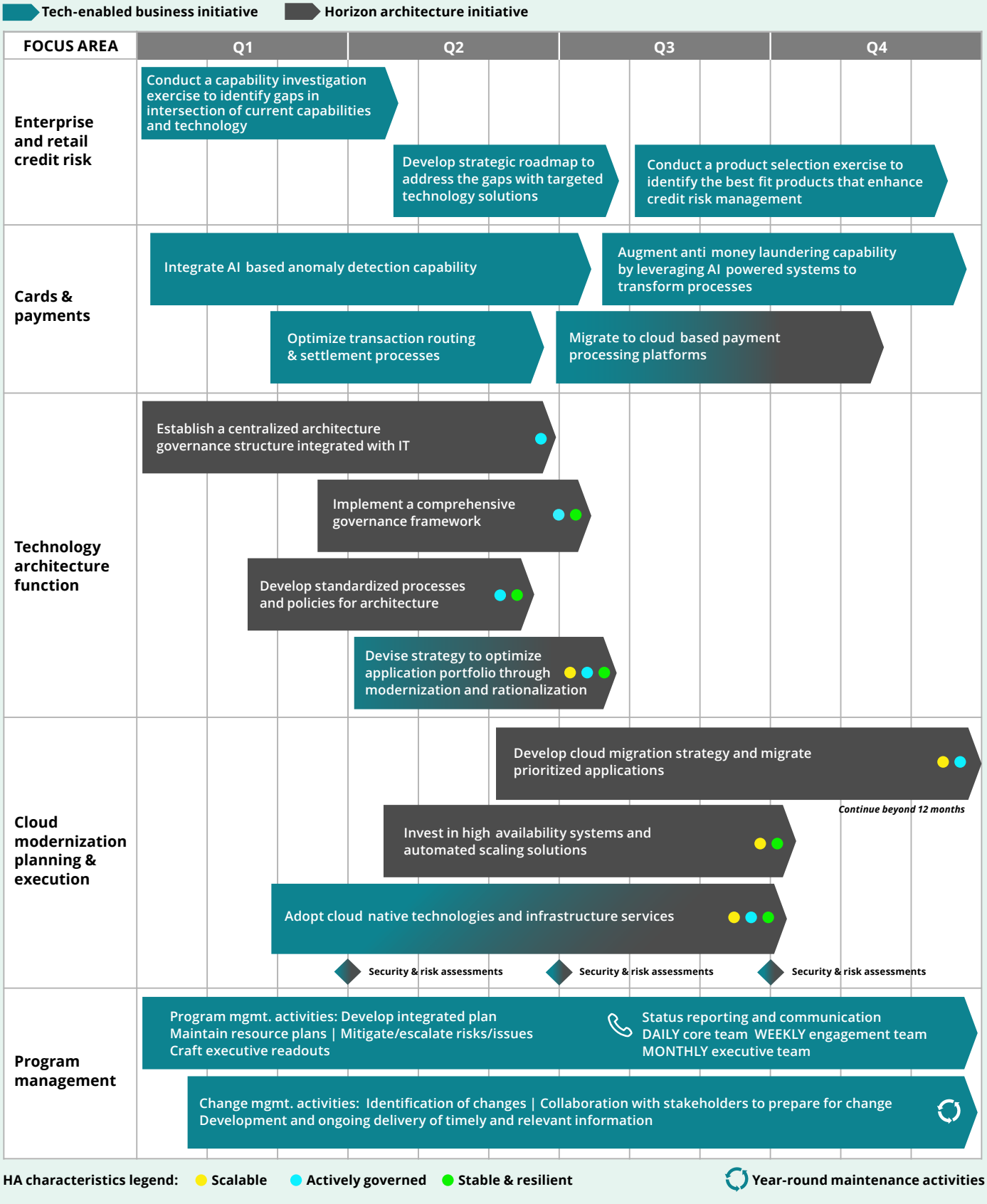
Case study: Regional Bank Holding Company
Step 4: Collaboratively develop an integrated horizon architecture roadmap

The bank's 12-month architecture roadmap—built on the strategic initiatives defined earlier with a structured, phased, and coordinated implementation plan—focused on high-impact initiatives that would drive foundational core improvements.

In the foundation-building phase, the bank updated its governance framework to include new standardized processes and policies and a centralized governance model. Subsequent phases focused on application portfolio modernization, application rationalization, and cloud migration that would benefit from the new architecture governance framework (figure 10 - on next page).

This comprehensive, phased approach included a clear execution timeline with short and long-term milestones. The ultimate result was an actionable roadmap that helped set the bank on a modernization pathway through initiatives spread across enterprise architecture, cloud, AI, and integrated governance, setting the bank on course for more than ~$12M in yearly spend optimization, and also resulted in a great degree of alignment between business and technology teams.

Figure 10. Integrated roadmap comprising HA initiatives and tech-enabled business initiatives



Enterprise architecture modernization across industries

While the journey this bank went on yielded powerful results, that is just one company's experience. Organizations across different industries can navigate their enterprise architecture modernization in preparation for an uncertain future, their AI strategy, their tech modernization programs, and more by following the same four steps of the HA framework has effectively helped organizations solve complex challenges at the intersection of business to evolve their enterprise and business architecture functions and enable C-suite priorities.

To give another example, one of the largest utility companies in the US wanted to be more agile, well-governed, and outcome focused, and it wanted to undertake initiatives that would help it keep pace with the technology changes happening at the core of the Power & Utilities sector. The company embarked on a transformation journey to comprehensively assess its current state, engaging both business and technology teams. The utility company's assessment revealed significant governance deficiencies and shadow IT teams operating with minimal oversight. The transformation teams then used the horizon architecture framework to *identify three focus areas:* ***active governance****,* ***innovation****, and* ***interoperability****.*

An enterprise architecture tool provided a single-pane view of IT assets/initiatives, enabling better communication and alignment between business and technology teams and data insights for decision-making. This was coupled with more federated governance while maintaining a degree of central oversight to ensure conformity and standardization that allowed for more agile and responsive decision-making, enabling the company to quickly adapt to business needs.

In another instance, one of the largest retail chains in the US aimed to extend its strong brand from physical stores into an online marketplace. However, the company faced significant challenges due to years of underinvestment and a heavy reliance on outdated or near-end-of-life technologies, which were hindering its digital ambitions. The company developed a comprehensive strategy based on the horizon architecture framework to modernize its technological initiatives in alignment with its future business vision. It prioritized **active governance**, **scalability**, and **agility**, and instituted a pragmatic architecture operating model. This process also focused on the need for application portfolio optimization across the detailed roadmap with prioritized initiatives and investments.

Over an 18-month period, the retailer's architecture simplification and cloud-first strategy achieved significant modernization benefits: ***$60 million in reduced maintenance and operational costs, and a more scalable and flexible infrastructure that is capable of supporting faster new-feature deployment to fuel future growth and innovation.***

Finally, we can look at the experience of a large US provider of vehicle loans that wanted to extend its online presence and provide seamless customer experience. However, the company's shift was hindered by its outdated technology landscape and the absence of a business-aligned tech strategy.

The company reorganized itself by dovetailing business and technology teams to drive closer collaboration across capability and requirement gathering with the goal to **streamline governance** and drive incremental **innovation**. The provider set up an Architecture Center of Excellence (ACOE)—a team of experienced leaders of the organization—that would provide oversight and expertise to different technology initiatives and maintain time and cost-efficiency checks. This helped them accelerate and quickly realize value from the initiatives, foster greater value realization from teams, and prevent run-ins and conflicts over a 15-month period. Moreover, the ACOE helped enterprise architects work in the trenches with domain and solution architects to enable clearer and faster decision-making, which helped to break down silos, drive innovation, and kick-start future investments.

In conclusion, what's beyond the horizon?

An organization can never really know what's on the horizon, which is the whole point of having a horizon architecture. The HA framework therefore, can be a pivotal tool for any organization trying to enhance its technology estate. It can address complex business challenges in ways that bring business and IT teams together. This collaboration helps develop the architectural characteristics that will become the future backbone of the enterprise. As C-suites refine and adapt their strategies, these architectures are anticipated to increasingly unlock future business and technology potential that we can only begin to imagine.

Share your journey with us

To learn more about how Deloitte collaborates with our clients on their horizon architecture journeys, or to share your insights with our specialists, please visit our website or contact our Horizon Architecture leadership team:

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Endnotes

1. Gartner MQ Report 2024:
   https://www.gartner.com/document-reader/document/5937407
2. Gartner Report 2024:
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