

AWS Cloud Adoption Framework

Business Perspective

November 2015



© 2015, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Notices

This document is provided for informational purposes only. It represents AWS's current product offerings and practices as of the date of issue of this document, which are subject to change without notice. Customers are responsible for making their own independent assessment of the information in this document and any use of AWS's products or services, each of which is provided "as is" without warranty of any kind, whether express or implied. This document does not create any warranties, representations, contractual commitments, conditions or assurances from AWS, its affiliates, suppliers or licensors. The responsibilities and liabilities of AWS to its customers are controlled by AWS agreements, and this document is not part of, nor does it modify, any agreement between AWS and its customers.

Contents

| | |
|------------------------|----|
| Abstract | 4 |
| Introduction | 4 |
| Strategy | 6 |
| Considerations | 8 |
| Value Management | 9 |
| Considerations | 10 |
| Cost Management | 11 |
| Considerations | 13 |
| Risk Management | 14 |
| Considerations | 15 |
| Governance | 16 |
| Considerations | 18 |
| CAF Taxonomy and Terms | 19 |
| Conclusion | 20 |
| List of Links | 20 |

Abstract

The Amazon Web Services (AWS) [Cloud Adoption Framework](#) (CAF) provides best practices and prescriptive guidance to accelerate an organization's move to cloud computing. The CAF guidance is broken into a number of areas of focus that are relevant to implementing cloud-based IT systems. These focus areas are called *perspectives*. Each perspective is covered in a separate whitepaper. This whitepaper covers the Business Perspective, which focuses on aligning IT strategy to business strategy and evaluating the cost and value derived through AWS cloud adoption.

Introduction

Most organizations have separate strategies for business and IT. However, many organizations are creating a single business strategy that has IT strategy as a subset. When you start a cloud adoption journey, look at your organization's business strategy and consider how your IT strategy supports it. Ensure that the business and IT portions of your organization are aligned to best enable you to develop your cloud adoption strategy.

Once the strategy is set, make sure that you have a plan to expose and manage cost and value. As you refine your business strategies you can proactively provide insight into the potential cost and value of making the changes required to bring your IT and cloud strategies into alignment with business requirements.

When creating a strategy specific to cloud adoption consider the impact to all aspects of the business and IT strategies. The cloud adoption strategy can be monitored and adjusted as business needs change and as the move to the cloud gives

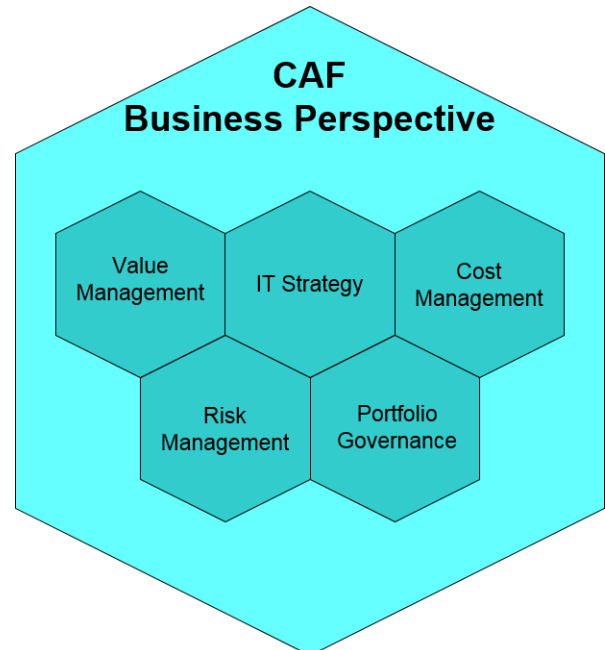


Figure 1: Components of the Business Perspective

you more insights into your business. This ability to make adjustments as you go, allows a quick start to cloud adoption with a limited amount of information. You will be able to regularly adjust your strategy as your organization acquires fresh information and skills. This way, your IT and business teams can stay flexible and shift directions quickly as necessary.

As you save costs or make investments on your cloud adoption journey, these funds can be used to accelerate the process, facilitate adoption, and increase automation. As you move to the cloud, the investment in your people by modernizing their workforce skills will increase employee loyalty and satisfaction.

Strategy

The strategy component of the AWS CAF Business perspective promotes the close alignment of IT with business strategy. Strategy should be derived from and aligned with the strategy of the overall business for the short, medium, and long term. As the business strategy changes, IT should be flexible enough to shift strategy and maintain alignment. Figure 2 is an example of aligning and connecting up IT to a business strategy. You can create a strategy for cloud computing as either part of the overall IT strategy or as a standalone effort.

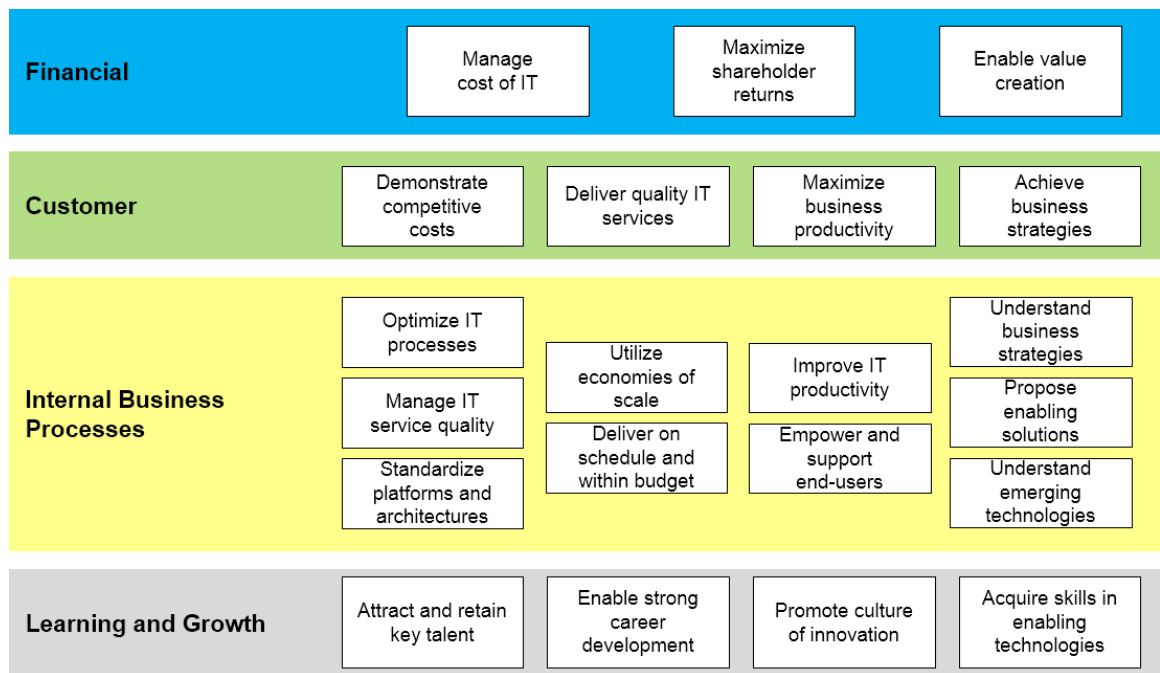


Figure 2: Aligning IT Strategy to Business Strategy

IT strategies can span multiple years and may offer mid-term and short-term strategies as milestone points on the long-term roadmap. If you phase in the cloud adoption strategy over time you can allow people, process, and technology changes to be planned and adopted, and risk to be identified and mitigated in a planned and reliable way.

You might find that your current non-cloud IT plans don't give you the flexibility and completeness you'll need for your cloud-based strategies, architectures, and solutions. A cloud-based approach allows IT strategy to flex as business strategy changes without losing all in-flight procurement, program, and project efforts. This lets the organization focus on value outcomes and end-user adoption.

Creating separate strategies for business, IT, cloud, and other areas most often leads to siloed team or program-level thinking. This can result in loss of alignment, reduction in outcome value, and loss of operational flexibility and fidelity. In worst cases, a siloed approach can also complicate end-user adoption. Consider creating a single service-oriented-architecture-(SOA) based approach to your cloud strategy. This will more closely align services with business capabilities, which tend to evolve or shift quicker than IT capability cycles.

In order for organizations to win with their cloud strategy, they set goals to adopt concepts such as capability sourcing, take a SOA-based approach to solution creation and delivery, and embrace a dev/sec/ops approach to delivering and operating IT capability.

A shift to the AWS cloud also allows greater visibility into the actual operational cost of a solution or product. Detailed billing data is available from AWS, and this data can be programmatically structured to provide real-time dashboard-based access to operating costs. You can use insights from this data to create a feedback loop of information that can be used to make adjustments to your IT strategy and provide more timely feedback into your business strategy.

Considerations

- **Do** align your cloud adoption to the organization’s business goals, such as greater business agility, shorter time to market, or lowered capital expense.
- **Do** consider using IT capabilities that include people, process, and technology as building blocks for the IT strategy.
- **Do** consider forming “tiger” or “swat” teams for cloud-based programs and projects to build the organizational skills needed to deliver cloud-based solutions.
- **Do** review your IT strategy regularly with members of the business group to verify that the IT initiatives that you planned are still relevant and will deliver the expected business outcomes required to achieve overall business goals.
- **Do** make experimentation and quick failure a part of the IT strategy.
- **Do** enable a complete cost view to provide a strong information feedback loop to supply input for making IT and business strategy adjustments.
- **Don’t** create separate, siloed strategies for business, IT and cloud.

Value Management

The value management component of the AWS CAF Business perspective covers value definition and metrics for the use of technology and cost of IT as a portion of the business value chain. Value management can include forecasting, cost management, prioritization of IT spending, and a system of allocating costs to various areas of the business. You create a partnership between business and IT stakeholders to enable the optimum use of IT investments. The partnership enables a way to synchronize changes to business need with delivery of IT capability.

AWS provides the ability to view specific IT operating costs and system performance data. Allocating costs to specific business groups or specific applications is achievable at near real-time speeds. AWS allows you to monitor and measure performance in near real-time. The strategy can be used to

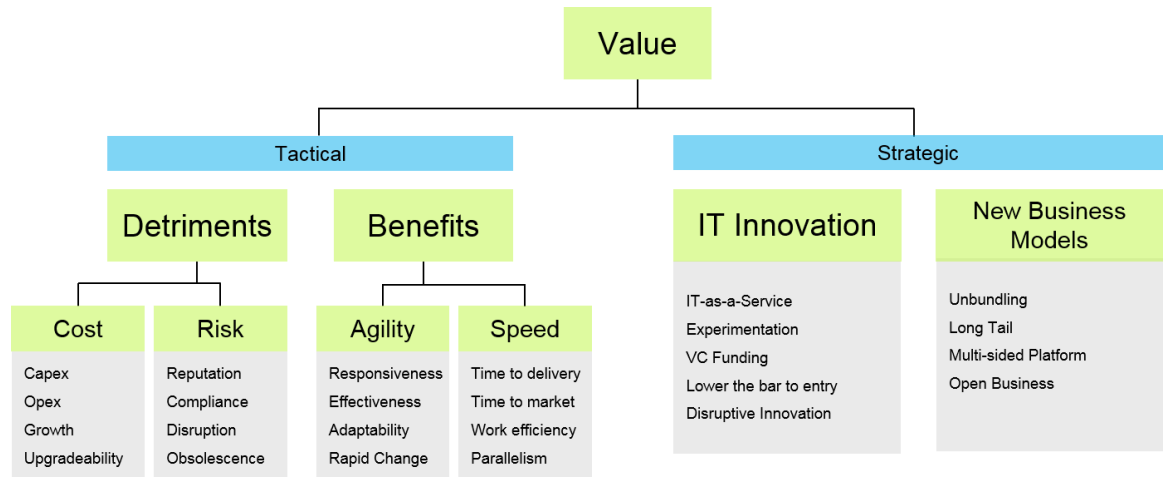


Figure 3: Example of a Value Model

determine and describe how value will be quantified and the areas where the project teams should focus. Figure 3 shows an example of a value model that can be used to better focus and prioritize initiatives.

Once the leadership, delivery, and operations teams understand prioritization based on value, IT leadership can focus on value control and allow project teams to manage value planning and allocation. With the responsibility for this type of planning and allocation nearer to where projects occur, project teams will have the ability to adjust IT project priority as the required business outcomes change.

Considerations

- **Do** take advantage of real-time cost monitoring capability to control value and costs, and to inform reprioritization efforts.
- **Do** take advantage of billing data to enable a charge-back or show-back approach to allocation.
- **Do** shift your view of value to a *business* outcome rather than *cost* outcome.
- **Do** plan for a strategic (rather than ad hoc) sourcing approach.
- **Do** use micro-funded experimentation to mitigate the risk of a program or project failing to provide the targeted business outcome.
- **Do** use the outcome from micro-funded experiments to inform additional allocations towards maximum value.
- **Do** set value-based exit criteria as part of solution delivery and “next step” funding.
- **Do** accelerate time to market and time to value by using more incremental and continuous approaches to reviewing and funding initiatives.
- **Do** increase business leadership trust by consistent delivery of capability to drive value.
- **Do** increase the confidence that IT development teams can deliver on expected outcomes by creating dashboards with detailed, real-time data for business sponsors.
- **Do** manage the number of applications supported by IT by enabling development teams to manage the products through the entire operation lifecycle.
- **Do** shift from non-composite application thinking to reusable service or composite application thinking.
- **Do not** expect each of the experiments that you micro-fund to be successful. Failing fast and failing cheap provides significant organizational value.

Cost Management

The cost management component of the AWS CAF Business perspective covers consideration of all costs associated with delivering IT capability. Cost is not the only consideration, but knowing what a service costs to operate can provide valuable insight. Cloud adoption will affect your cost management. Many organizations separate costs and budgets by staffing, facilities, suppliers, hardware, software, capital and operational costs. Creating a tagging strategy that

| | |
|----------------|--|
| Software Costs | OS, hypervisor, data center management software Software Licensing and Maintenance |
| Server Costs | Server Hardware + Maintenance Server Software + Maintenance (OS, Virtualization) |
| Storage Costs | Storage Infrastructure (SAN switches, Disk) + Maintenance Storage Admin |
| Network Costs | Network Infrastructure (LAN switches, WAN capacity) + Maintenance Network Admin |
| IT Admin Costs | virtualization admin, system admin, storage admin, network admin, security admin, data center admin |
| Facility Costs | Building cost, Maintenance, Taxes, Security staff, Facilities staff, Power cost, Cooling cost |

Figure 4: Example of Cost Modeling Considerations

allows identification of costs in a bill that is intuitive and has a relevant and structured naming convention will help to minimize your cost management overhead and increase transparency.

AWS billing is able to provide a high level of granularity and visibility into what services and features cost. With a well thought through account and tagging strategy, you can determine exactly how much different applications cost on a monthly basis. Additionally, with proper event setting, robust monitoring, and alert configuration you can create a dashboard with near real-time billing information, and you can be notified of unexpected changes in resource state and usage. Examples of costs (Figure 4) include staffing costs, facilities costs, and supplier costs (across both capital and operational expenditures).

As you move to the cloud, an effective cost management approach to sourcing is to focus on an IT capability rather than the individual components and resources

needed to enable the IT capability. For example, if you need an order management capability, consider the sourcing of people, processes, and technology as a whole and not just as separate tasks. This approach will provide greater visibility and transparency into the total cost of an IT capability. Rather than sourcing separate components of order management, such as software, hardware, and resources, you would be sourcing a single capability that combines all three. This streamlines the sourcing function and provides the time to focus on prioritization of programs to increase business value and alignment.

Consider having a plan to structure cost allocation through tagging and a structured naming convention that is aligned to an existing accounting structure in the organization. Prior to implementation, consider using a structured naming convention, such as AWS account naming, and consider using tagging to add information that associates costs to specific business and IT capabilities. If you don't use tagging and a naming convention, you'll have less insight into the actual cost of operating a solution. Additionally, consider determining the information that you want to display and monitor on a near real-time dashboard. A dashboard such as this can provide early warning if service costs start to rise above the amounts you planned. Up-front planning for accounts, tagging, and dashboard configuration will provide greater control over cost management and faster optimization.

With the flexibility provided through AWS services comes the potential for adjusting quickly to cost variances. You can build in governance mechanisms and triggers that surface potential cost overruns. This will provide support for experimentation with limited risk of incurring more costs than you intended to. A tagging and Amazon CloudWatch taxonomy strategy can be designed to give full visibility into costs on a near real time basis.

You do not have to change your budgeting process when you adopt AWS. However, you have an opportunity to enhance and streamline your budgeting by taking advantage of AWS services allocation. You will discover that some of the reasons for having a strong planning process up front are not relevant when using AWS services. For example, if you are planning to use AWS services to update a back-end environment, you no longer will need a long lead time to order and install servers. In addition, if the scope of the project changes or if the project is cancelled, you are not stuck with significant capital costs for hardware that you might no longer need. Using AWS, the rhythm of planning can shift from being an annual, heavyweight event to an ongoing process since the need for long lead

times to procure and install hardware no longer exists. You will have the flexibility to quickly review and reprioritize programs and projects as business needs change. This helps IT to become fast and flexible, and helps to ensure that the IT organization does not become a roadblock to business agility.

Considerations

- **Do** consider having a plan to structure cost allocation through tagging and a structured naming convention that is aligned to an existing accounting structure in the organization.
- **Do** consider enabling a complete cost view to gain better insight into derived business value.
- **Do** consider using funding governance to commoditize IT by using a SaaS first approach.
- **Do** consider setting a commodity services first principle to enable streamlined mergers and acquisitions (M&A).
- **Do** consider shifting from an annual/multi-year funding paradigm to a more evergreen or incremental funding approach that ties merit-based funding to incremental solution delivery.
- **Do** consider allocating sufficient funding in existing team budgets to enable experimentation and enable flexibility and agility.
- **Do** consider taking advantage of the shift from CAPEX to OPEX by evaluating and experimenting with more ideas; fund ideas that deliver on expected value.
- **Do** consider increasing the velocity of IT value delivery by funding at a micro-project and micro-service level.
- **Do** consider funding atomic, decomposed micro services programs and projects through incremental funding.
- **Do** consider creating a fleet manager role to oversee use of cloud-based services.
- **Do** use quality assurance audit and value realization techniques to enable real-time, fine grained IT cost assessment on a program, project or LOB basis.
- **Don't** allow the use of untagged services.

Risk Management

The Risk Management component of the AWS CAF Business perspective encourages an organization to understand, document, and widely communicate the level of risk from the use of IT that it is willing or able to accept and manage. By aligning the way you capture and manage the risk from the use of IT with the overall organizational risk management process, you can minimize the potential for compliance failures.

Shifting to AWS services minimizes and transfers the risk related to hardware operation and failure. Because you are leveraging AWS for infrastructure as a service (IaaS), you no longer need to have staff replace failed parts or maintain an inventory for replacement. You can use AWS tools to ensure the programmatic enforcement of compliance. [AWS Compliance Enablers are downloadable here](#). Since the enforcement is programmatic, near real-time visibility into compliance issues can be routed to the teams responsible for risk mitigation for the flagged areas.

Risk to the business can be reduced because the large upfront equipment expenditures and data center space required in the past are no longer needed. Proven reference architectures and implementations for AWS are readily available. This helps mitigate the potential of significant losses through ordering and receiving assets that are no longer needed for the business initiative they were purchased for.

Risk associated with strategic sourcing can be mitigated by using known and proven services in the services catalog to deliver new products and solutions. Schedule-based risks and procurement lead-time risk can be mitigated because services can be instantaneously enabled or disabled as projects start and end.

Considerations

- **Do** consider reviewing your IT risk assessment for alignment with the organizational risk assessment during (and after) your cloud transformation.
- **Do** consider how you can automate risk assessment and compliance.
- **Do** consider quantifying the value derived from risk mitigation as part of an AWS adoption initiative.
- **Do** consider how you can mitigate risk through strategic sourcing.
- **Do** consider how you can leverage proven reference architectures and implementations as part of your risk management strategy.

Governance

The governance component of the AWS CAF Business perspective helps decision makers determine practices for the governance of IT in partnership with the rest of the organization. Governance requires clear roles, responsibilities, and authority to achieve the objectives that have been defined within the IT strategy. It integrates the practices for IT governance with the practices for overall governance within the organization. This ensures that there is compliance with legal and regulatory requirements.

Model governance principles that enable and enforce a combined lifecycle of development, security, and operations so you can drive a culture that combines accountability and responsibility for product creation and support. When you model your governance principles to enable smaller project execution and delivery to targeted outcomes you can provide guidance that encourages bounded freedom to experiment, fail, and learn as an expected part of business outcome delivery.

Consider using project hypothesis experimentation and validation as entry criteria into the portfolio and project work streams. For example, if you are working on an initiative to create or update a knowledge management (KM) system, consider setting up your top choices to determine how well your solutions appear to deliver against business outcomes, how well they integrate into the existing environment, how robust the solution is, and how well the delivery team can work with the proposed technology.

You can shift the role of governance from an up-front control function to a mission-command-style monitoring function to ensure alignment of cost, outcomes, and value of total enablement. Mission command-style governance is enabled by the flexibility and agility provided by cloud, combined with the ability to provide near real-time dashboard access to the information needed to track outcome to value

In practice, you need to continually collect, grow, and maintain your portfolio of validated intellectual property derived from experimentation and outcome delivery in a similar way to that used for code collection and maintenance. This turns tacit knowledge that exists in the organization into a managed and viable commodity that can be used to inform future decisions.

Consider institutionalizing the innovative minimally viable product (MVP) process for your development teams. For example, if your business sponsor wants a knowledge management solution with twenty or more features, determine the fewest features that can provide value against the expected business outcome. Release a solution when those few features are complete to start delivering some value. Then capture feedback from the end users on what features they need next. This enables a shift from business dictating requirements to business providing questions that describe outcomes that the development team can act on in a quick and cost-effective manner to deliver the desired outcome.

A best practice is to create a collaborative, virtual team that includes business team members as part of the extended development team; this drives shared responsibility and accountability for the full product lifecycle. Rather than the business setting requirements, the development team delivering a solution, and an operations team operating and maintaining the solution, you would create an environment where a single team performs all of these functions. When developers have a robust service catalog as a resource they can use to quickly experiment and create solutions, they can maximize innovative solution delivery to meet requested business outcomes. With the freedom and speed to experiment and fail, collaboration across the virtual team will be enhanced.

By driving the integration of teams, you can focus on outcome as a success metric rather than on time, on budget as success criteria. Additionally, by driving stronger collaboration between IT (and IT governance) and business (and business governance) the IT expertise needed to ensure legal and regulatory hurdles are met will be more readily available to the business team members.

A shift to a more embedded operating model where a multi-disciplinary team is both responsible for and accountable for the full lifecycle of the product delivered should be considered. Shifting IT from governing asset management to governing service management and, in addition, combining IT governance with overall corporate governance will enable more effective collaboration between business teams and IT delivery/support teams.

Considerations

- **Do** use funding governance to commoditize IT by using a software as a service (SaaS) first approach.
- **Do** start a strategic sourcing approach.
- **Do** use quality assurance and value audit techniques to enable real-time, fine-grained IT assessment on a program or project and/or a line of business (LOB) basis.
- **Do** use MVP business outcomes as part of the entry criteria for adding a capability to the portfolio.
- **Do** set business outcome metrics as exit criteria for every submission into the portfolio.
- **Do** establish practices for the governance of IT in partnership with the rest of the organization, e.g., create a collaborative, virtual team approach that makes business team members part of the extended development team to drive shared responsibility.
- **Do** establish clear roles, responsibilities, and authority to achieve the objectives that have been defined within the IT strategy.
- **Do** integrate the practices for IT governance with the practices for overall governance of the organization.
- **Do** model governance principles that enable and enforce a lifecycle approach to product creation and support.
- **Do** use project hypothesis experimentation and validation as criteria for entry into the portfolio and project work stream.
- **Do** consider shifting to a more embedded operating model where a multi-disciplinary team is both responsible and accountable for the full lifecycle of the product delivered.
- **Do** consider shifting IT from a governing asset to service management; move away from a command-and-control mindset to a mission-command mindset.

CAF Taxonomy and Terms

The Cloud Adoption Framework (CAF) is the framework AWS created to capture guidance and best practices from previous customer engagements. An AWS CAF *perspective* represents an area of focus relevant to implementing cloud-based IT systems in organizations. For example, the Business Perspective provides guidance for ensuring that the business and IT portions of your organization are aligned to best enable you to develop and manage your cloud adoption strategy.

Each CAF perspective is made up of components and activities. A *component* is a sub-area of a perspective that represents a specific aspect that needs attention. This whitepaper explores the components of the Business perspective. Within each component an *activity* provides prescriptive guidance for creating actionable plans an organization can use to move to the cloud and operate cloud-based solutions.

For example, *IT Strategy* is one component of the Business perspective and planning for experimentation and quick failure is a recommended activity within that component.

When combined, the Cloud Adoption Framework (CAF) and the Cloud Adoption Methodology (CAM) can be used as guidance during your journey to the AWS cloud.

Conclusion

This whitepaper has given you some high-level guidance from a business perspective, as you set out on your cloud adoption journey. A key point to remember is to ensure that the business and IT portions of your organization are aligned so that you can best develop your cloud adoption strategy.

We gave you a number of important considerations to keep in mind as you make your transformation to the cloud:

- **Do** align your cloud adoption to the organization's business goals, such as greater business agility, shorter time to market, or lowered capital expense.
- **Do** take advantage of real-time cost monitoring capability to control value and costs, and to inform reprioritization efforts.
- **Do** consider having a plan to structure cost allocation through tagging and a structured naming convention that is aligned to an existing accounting structure in the organization.
- **Do** consider reviewing your IT risk assessment for alignment with the organizational risk assessment during (and after) your cloud transformation.
- **Do** integrate the practices for IT governance with the practices for overall governance of the organization.

List of Links

This is a list of the links provided throughout this paper:

- Cloud Adoption Framework
https://do.awsstatic.com/whitepapers/aws_cloud_adoption_framework.pdf
- AWS Compliance Enablers
<https://aws.amazon.com/compliance/compliance-enablers/>