Understanding Cloud Economics

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Overview

Understanding funding between traditional data centers and the cloud

Utilizing AWS tools for cost organization

Utilizing AWS tools to make a case for moving to the cloud

Exploring AWS costs using the AWS provided tools

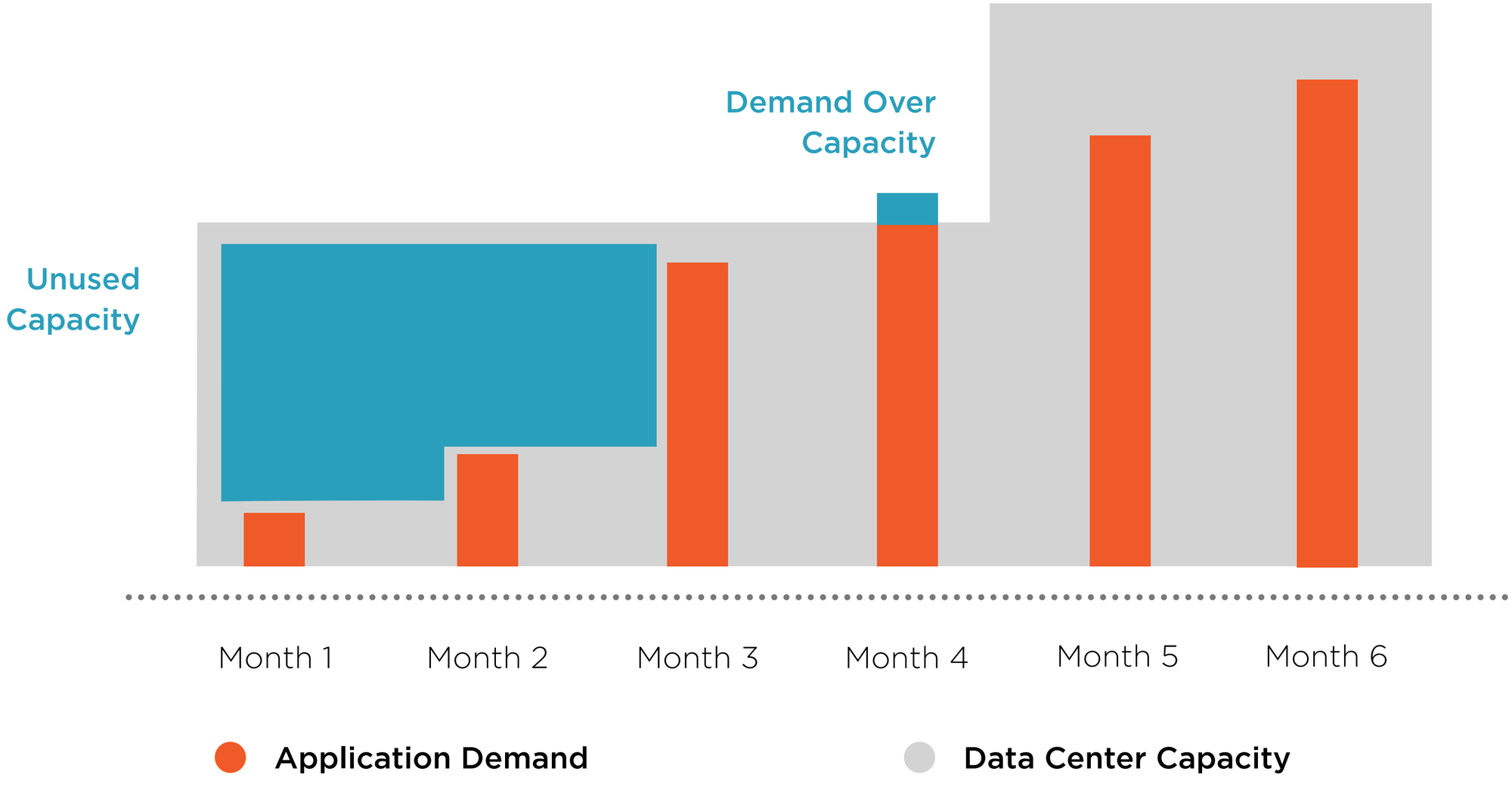
Capitalized Expenditure (CapEx)

When building a data center, an organization invests in upfront costs for the building, servers, and supporting equipment. This type of expense to attain a fixed asset is referred to as a **Capitalized Expenditure** or **CapEx**.

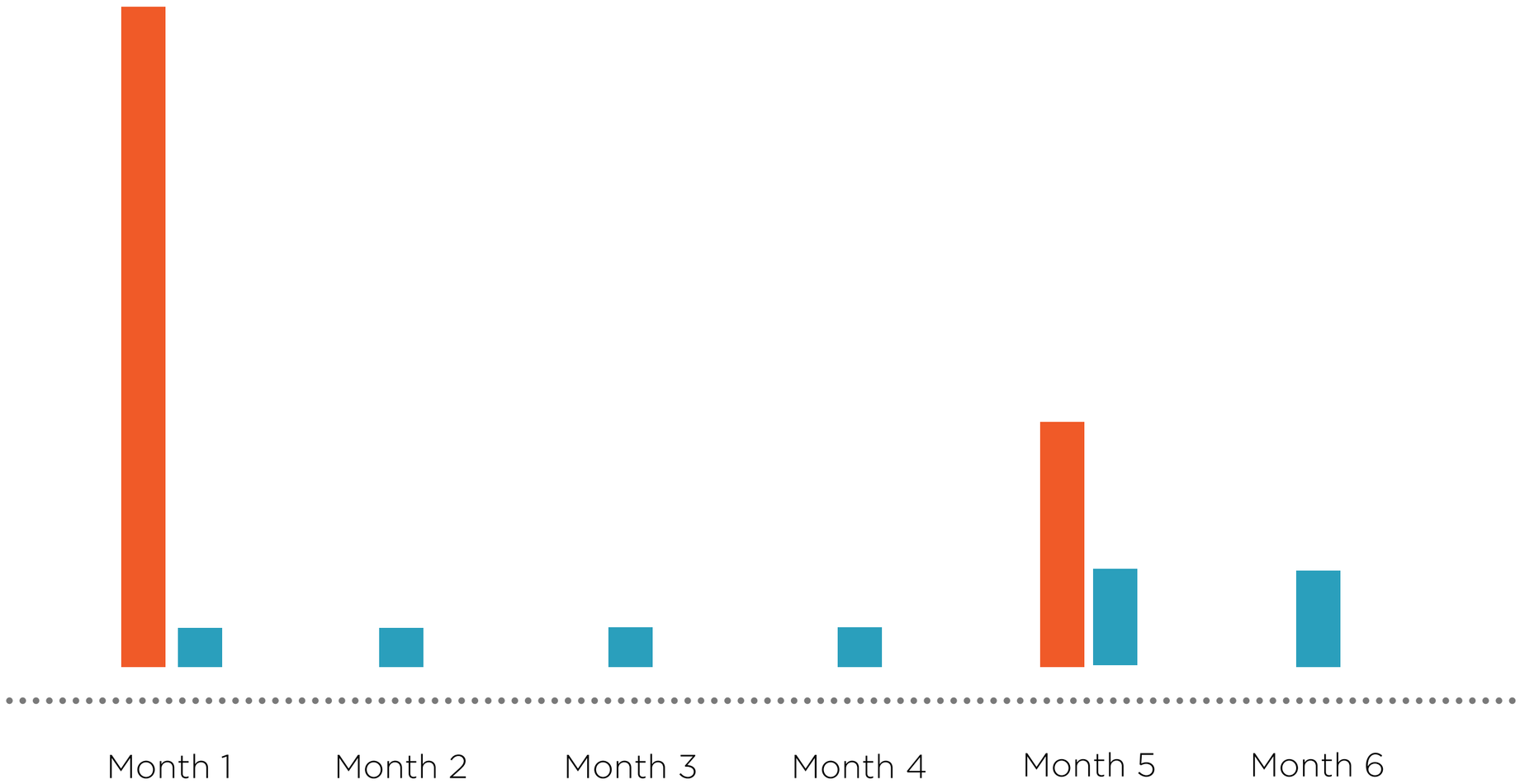
Operating Expenditure (OpEx)

The regular day to day expenses of a business are considered **Operating Expenditures** or **OpEx**. After the initial build of a data center, ongoing connectivity, utility, and maintenance costs would be considered OpEx.

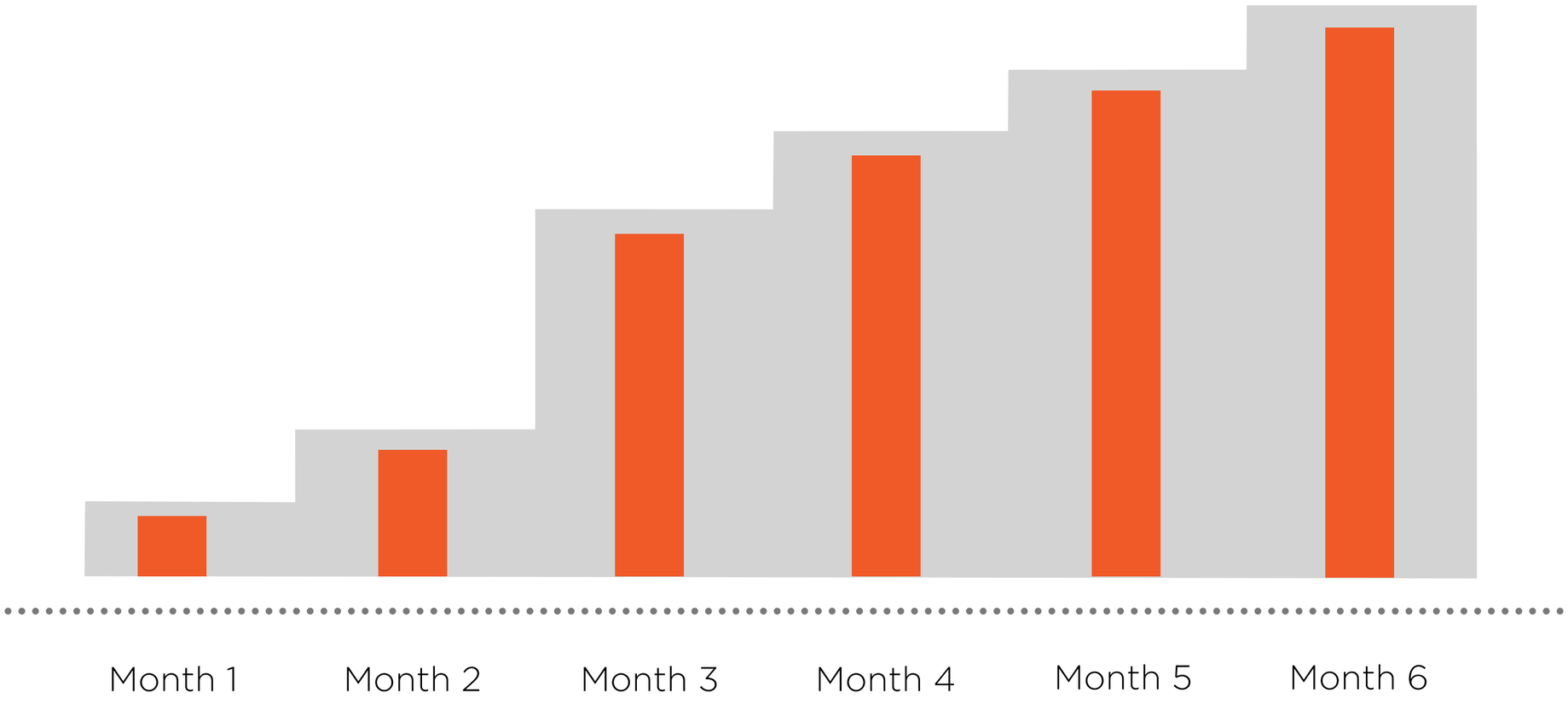
Handling Demand in Your Data Center



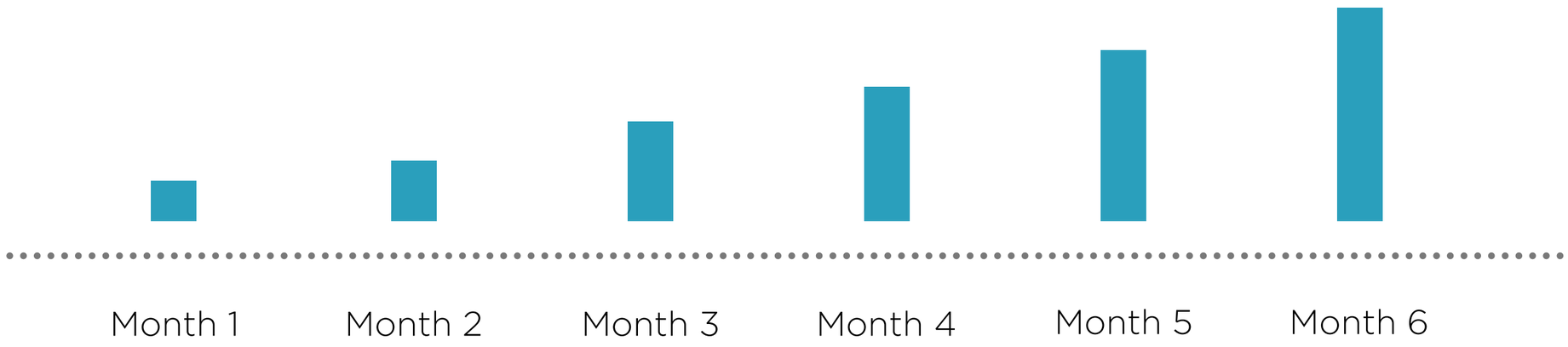
Building a Data Center



Handling Demand in The Cloud



Cost in the Cloud



Capitalized Expenditure (CapEx)

Operational Expenditure (OpEx)

Financial Implications

Manage Your Own Data Center

Large Up-front Costs (CapEx)

Potential for either Under-used Capacity or Unmet Demand

Increasing Capacity Takes Time and Additional Investment (CapEx)

Monthly Costs will Map to Predicted Infrastructure Needs

Leverage Cloud Infrastructure

No Up-front Investment

You Pay as You Go for Infrastructure (OpEx)

Capacity Scales to Meet User Demand and Can Be Provisioned Immediately

Monthly Costs will Map to User Demand

Organizing and Optimizing AWS Costs

AWS Cost Explorer

User Interface for exploring your AWS costs

Provides breakdowns including:

- By service
- By cost tag

Provides predictions for the next three months of costs

Gives recommendations for cost optimization

Can be accessed via API

AWS Budgets

Utilizes data from AWS Cost Explorer to plan and track your usage across AWS services. It can track cost per service, service usage, reserved instance utilization and coverage, and Savings Plans utilization and coverage.

AWS Cost Planning Tools

AWS TCO Calculator

Enables an organization to determine what could be saved by leveraging cloud infrastructure

AWS Simple Monthly Calculator

Enables an organization to calculate the cost of running specific AWS infrastructure

AWS Resource Tags

Metadata assigned to a specific AWS resource

Includes a name and an optional value

Common use cases include department, environment, or project

Cost allocation report includes costs grouped by active tags

Tags can be leveraged within the AWS Costs Explorer

AWS Organizations

Allows organizations to manage multiple accounts under a single master account

Provides organizations with the ability to leverage Consolidated Billing for all accounts

Enables organizations to centralize logging and security standards across accounts

Using the AWS TCO Calculator

Demo

Accessing the AWS TCO Calculator utility

Estimating costs savings for an organization using the TCO Calculator

Downloading a summary report from the TCO Calculator

Using the AWS Simple Monthly Calculator

Demo

Accessing the AWS Simple Monthly Calculator

Estimating costs for a workload on the cloud using the calculator

Saving and sharing the results with other individuals

Reviewing Costs with the Cost Explorer

Demo

Accessing the AWS Cost Explorer within an AWS Account

Reviewing charges by service for an AWS Account

Utilizing pre-defined reports included with the Cost Explorer

Downloading data from the AWS Cost Explorer

Applying Cloud Economics

Scenario 1

Oscar's company has multiple departments that work within AWS

Finance is asking for a clean separation of AWS costs between departments

Currently all resources are included within a single AWS account

What approach would meet this need for future costs with minimal effort?

Scenario 2

Cindy's company is considering a transition to the cloud

They currently have two physical data centers that they own and maintain

Stakeholders are questioning whether this approach will save money

Which approach should Cindy take to make a case for the cloud?

Scenario 3

William is a web developer at his company

Given some recent downtime he is looking at moving their site to the cloud

Finance is asking for an estimate of costs for this transition to AWS

What approach should William take to get this data to his finance team?

Summary

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Scenario 1

Oscar's company has multiple departments that work within AWS

Finance is asking for a clean separation of AWS costs between departments

Currently all resources are included within a single AWS account

What approach would meet this need for future costs with minimal effort?

Solution: Create and leverage a Resource Tag for Department

Scenario 2

Cindy's company is considering a transition to the cloud

They currently have two physical data centers that they own and maintain

Stakeholders are questioning whether this approach will save money

Which approach should Cindy take to make a case for the cloud?

Solution: Utilize the AWS TCO Calculator and provide reports to stakeholders

Scenario 3

William is a web developer at his company

Given some recent downtime he is looking at moving their site to the cloud

Finance is asking for an estimate of costs for this transition to AWS

What approach should William take to get this data to his finance team?

Solution: Utilize the AWS Simple Monthly Calculator and share results