Track 3 | Session 3

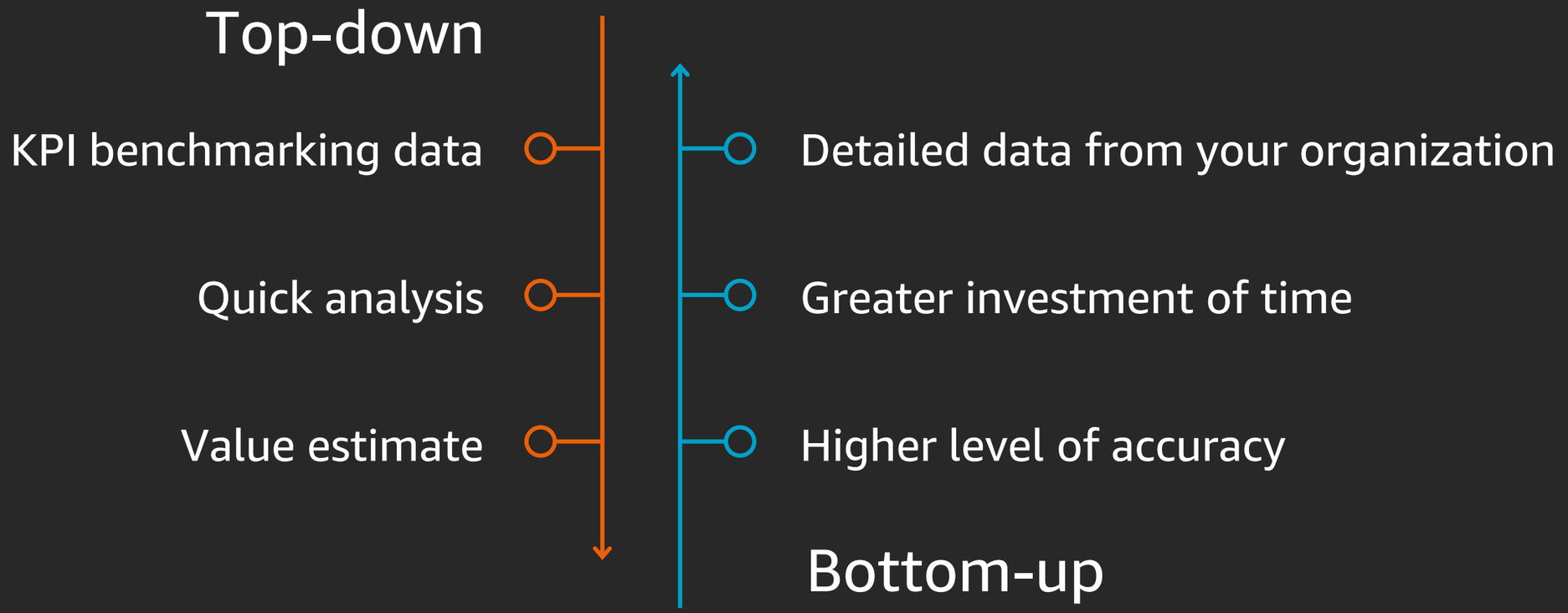
如何妥善運用雲端優勢遷移上雲

Vautier, Nicolas

Leader, Taiwan Solutions Architecture, AWS

aws SUMMIT

Two main approaches for cloud value analysis



Quantifying business value

Cloud Value Framework

Cost savings (TCO)

What is it?

Infrastructure cost savings or avoidance from moving to the cloud

Example

50%+ reduction in TCO (GE)

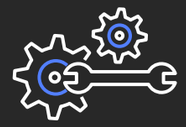
Staff productivity

What is it?

Efficiency improvement by function on a task-by-task basis

Example

More than 500 hours per year of server configuration time saved (Sage)



Operational resilience

What is it?

Benefit of improving SLAs and reducing unplanned outage

Example

Critical workloads run in multiple Availability Zones and Regions for robust DR (Expedia)

Business agility

What is it?

Deploying new features or applications faster and reducing errors

Example

Launch of new products 75% faster (Unilever)

Cost impact

Value impact

Cloud Value Framework

Cost savings

Cost savings (TCO)

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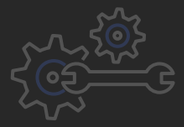

Operational resilience

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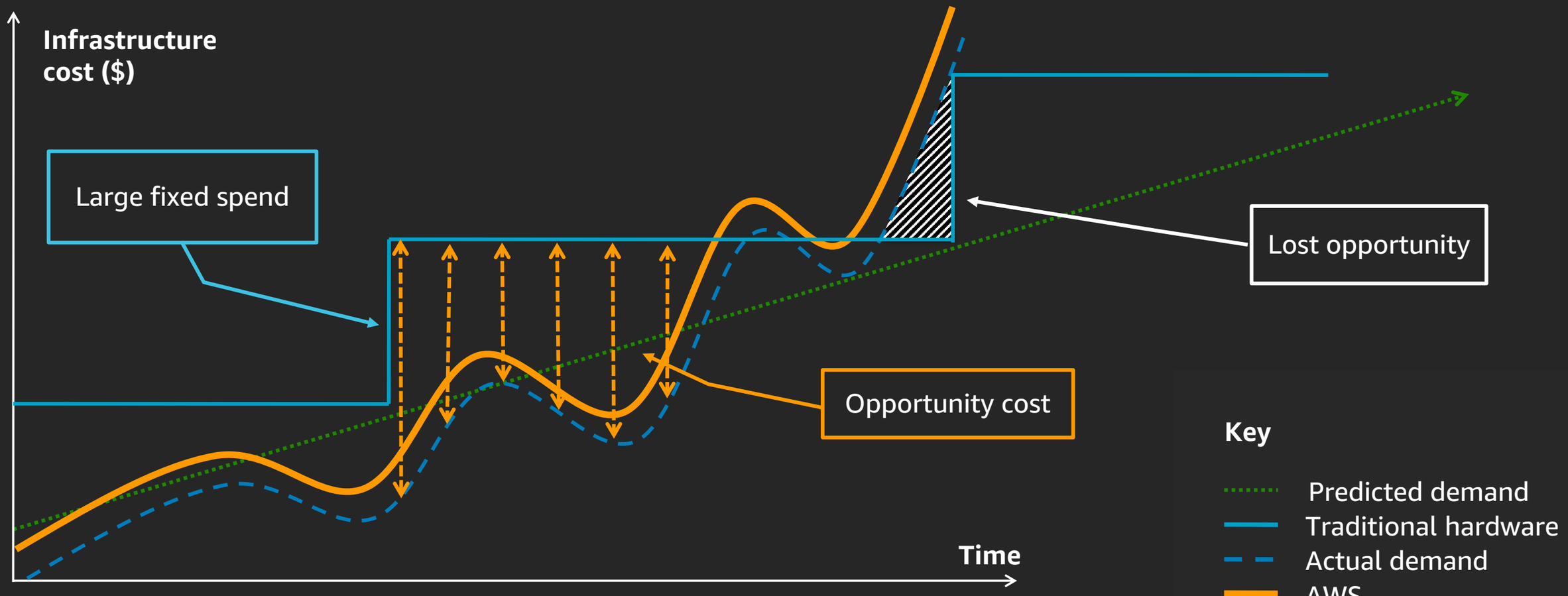
Live Nation

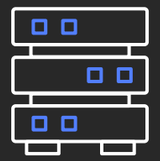
Estimated 18% savings, realized 40% savings 1 year after migration, and realized 58% savings after 18 months

Cost savings

Economics of the cloud

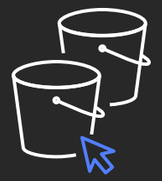


How do customers lower their costs with AWS?



Server sizing based on compute needs

84% of on-premises workloads are over-provisioned



Pricing model choice to support variable and stable workloads

On-Demand

Reserved

Spot

Economies of scale allow AWS to continually lower costs

78 price reductions*

*As of December 4, 2019

Cost savings

Modeling on premises

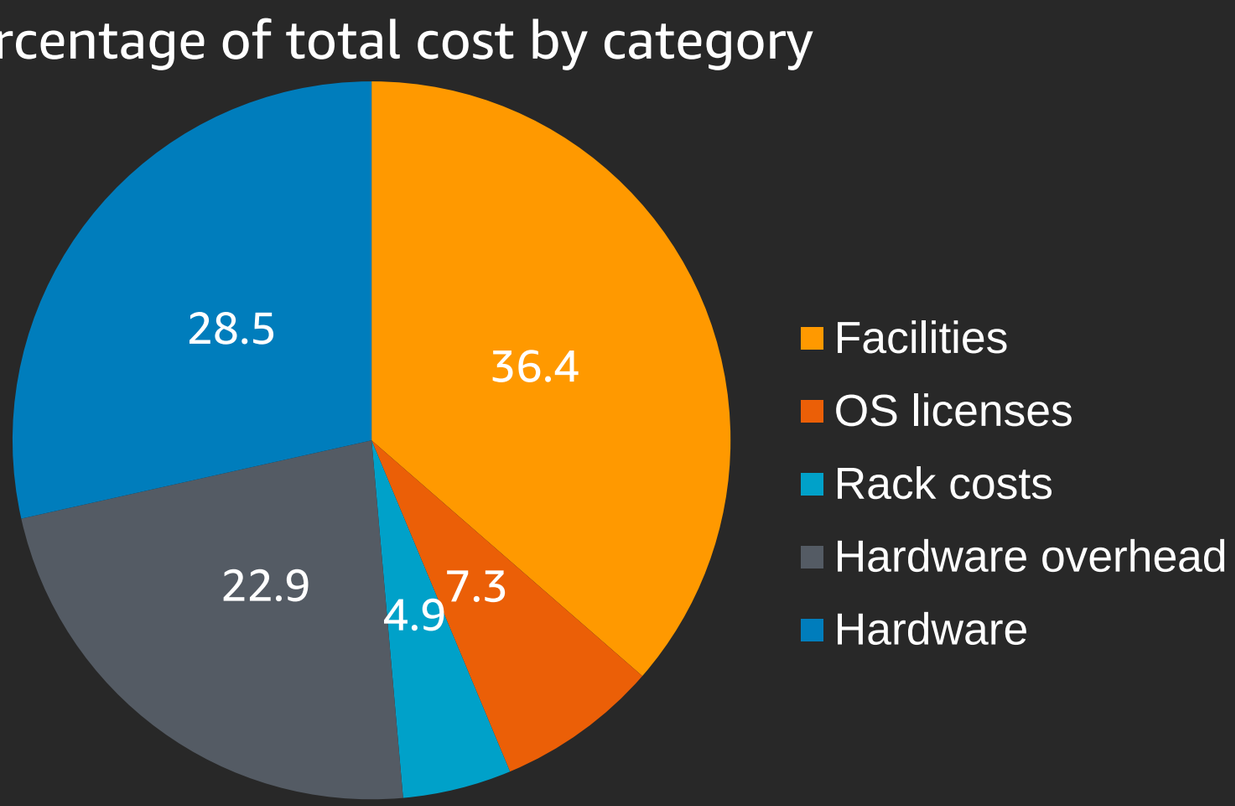
Illustrative

1	Server costs	Hardware: server, rack chassis PDUs, ToR switches (+ maintenance)	Software: OS, virtualization licenses (+ maintenance)	**Facilities cost**: Space, Power, Cooling
2	Storage costs	Hardware: storage disks, SAN/FC switches	Storage software costs (+ maintenance)	**Facilities cost**: Space, Power, Cooling
3	Network costs	Network hardware: LAN switches, load balancer	Recurring ISP and bandwidth costs	**Facilities cost**: Space, Power, Cooling

Diagram doesn’t include every cost item. For example, software costs can include database, management, and middle-tier software costs. Facilities costs can include costs associated with upgrades, maintenance, building security, taxes, and other items.

Cost savings: Server cost is just the beginning

For an individual server, the 5-year total cost of ownership (TCO) is **3.5x** the cost of the hardware purchased



Cost savings

Example

1 non-virtualized physical server, 16 cores, and 64 GB RAM at 50% utilization

1 c5.4xl (3-year TCO)

On premises

Server hardware	$8K
Maintenance	$3.6K
Rack	$2K
Facilities	$10.8K
Labor	$4K
Software	$0
Total (3-year)	**$28.4K**

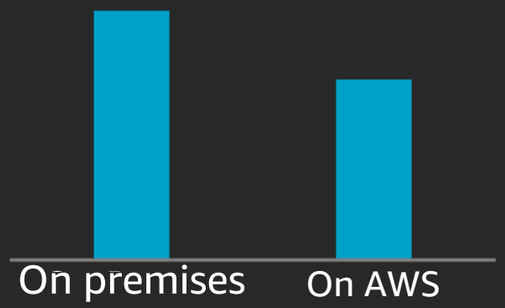
AWS

Amazon EC2 3-year RI	$6.5K
Labor	$1K
Support	$1K
Total (3-year)	**$8.5K**

Cost savings: AWS benchmarking insights

AWS reduces costs

All customers

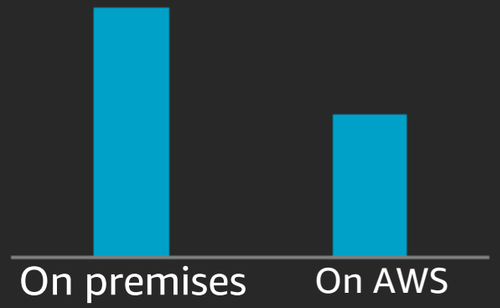


27.4%

Reduction in overall spend per user

Cost reduction grows as customers mature and scale on AWS

Applications with 1,000+ users



42.4%

Reduction in overall spend per user

Multi-cloud vs. AWS exclusive customers

12.3%

Lower overall spend per user vs. multi-cloud customer

Source: AWS Cloud Economics Benchmarking

Cloud Value Framework

Cost savings (TCO)

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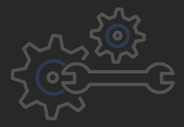

Operational resilience

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Business agility

What is it?

Deploying new features or applications faster and reducing errors

National Bank of Canada

"Building a Hadoop cluster in-house would have taken us **several months, but we were using this solution much faster because of the AWS Cloud.** That was key for us, and it validated our decision to move to the cloud."

—Pascal Bergeron, Director of Algorithmic Trading

Staff productivity

Focus on **value-added** work

Staff productivity

Example

Illustrative

Server administrator

Task	Typical reduction	Description
Server budgeting and planning	90%	There is no capital server budget or plan in the AWS Cloud
Server purchasing process	75%	Instance purchasing requires minimal effort in comparison to server purchasing
Long-term capacity planning	75%	Capacity planning is simply a matter of initiating new instances based on thresholds, and much of this can be automated
Project budgeting and planning	75%	Project budgeting and planning effort should be significantly reduced
Prepare detailed implementation plans	75%	Implementation plans will be reduced since instance initiation is straightforward
Arrange repair for hardware on occasion of hardware failure	100%	Not necessary with AWS
Installing, upgrading & removing software	50%	Simplify and automate OS patching and updating

Staff productivity

Example

Server administrator

Task	Typical reduction
Server budgeting and planning	90%
Server purchasing process	75%
Long-term capacity planning	75%
Project budgeting and planning	75%
Prepare detailed implementation plans	75%
Arrange repair for hardware on occasion of hardware failure	100%
Installing, upgrading & removing software	50%

25% of time

X

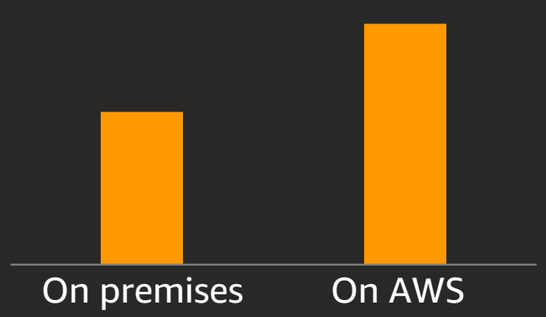
75% reduction with AWS

18.8% efficiency gain

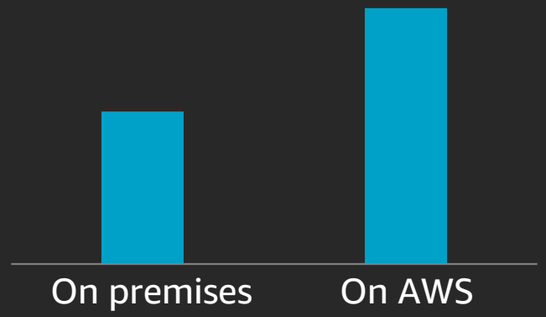
Staff productivity: AWS benchmarking insights

Cloud improves efficiency

VMs managed per admin



TBs managed per admin

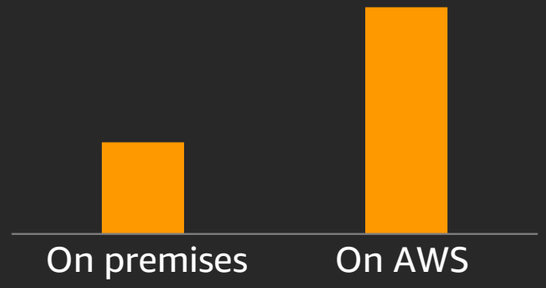


57.9%
Increase in VMs managed per admin

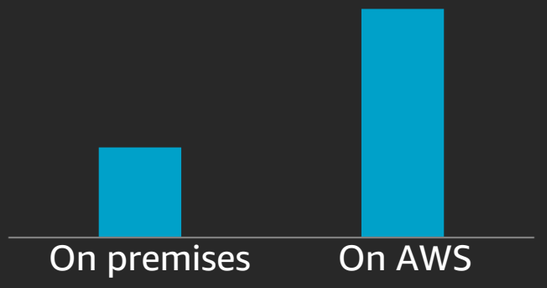
67.7%
Increase in TBs managed per admin

With larger gains for rearchitected applications

VMs managed per admin



TBs managed per admin



147.7%
Increase in VMs managed per admin

153.5%
Increase in TBs managed per admin

Source: AWS Cloud Economics Benchmarking

Cloud Value Framework

Operational resilience

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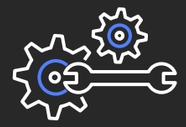


Operational resilience

What is it?

Benefit of improving SLAs and reducing unplanned outage

Business agility

What is it?

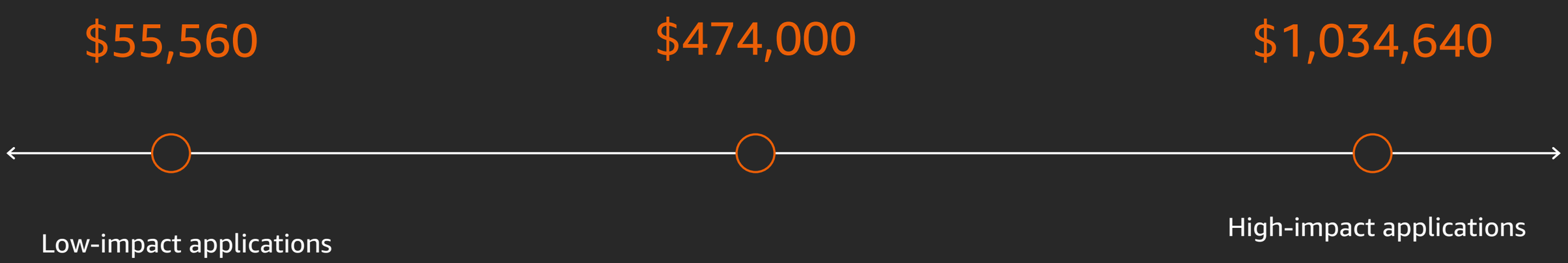
Deploying new features or applications faster and reducing errors

CONDÉ NAST

Condé Nast Russia now experiences uptimes of 99.9%, a 15% increase from the availability in the data center – and if the site does go down, it can be restored in a matter of minutes from a backup system

Operational resilience

Downtime costs



Source: Ponemon Institute

Operational resilience

Categories of downtime cost

Cost category	% of total	Definition
Third parties	1.3%	The cost of contractors, consultants, auditors, and other specialists engaged to help resolve unplanned outages
Equipment	1.3%	The cost of new equipment purchases and repairs, including refurbishment
Ex-post activities	1.1%	All after-the-fact incidental costs associated with the business disruption and recovery
Recovery	2.9%	Activities and associated costs that relate to bringing the organization's networks and core systems back to a state of readiness
Detection	3.6%	Activities associated with the initial discovery and subsequent investigation of the partial or complete outage incident
IT productivity	8.4%	The lost time and related expenses associated with IT personnel downtime
End user productivity	18.7%	The lost time and related expenses associated with end user downtime
Lost revenue	28.2%	The total revenue loss from customers and potential customers due to their inability to access core systems during the outage period
Business disruption	34.6%	Additional economic loss of the outage, including reputational damages, customer churn, and lost business opportunities
Total	**100%**	

Operational resilience

Example - Media Company

Illustrative

Calculate cost per minute of unplanned downtime

1. Business user productivity

# of users = 1,500

Average FTE cost = $125K/year

FTE cost = $1,500/minute

2. Other categories

~50% of cost

FTE cost = $750/minute

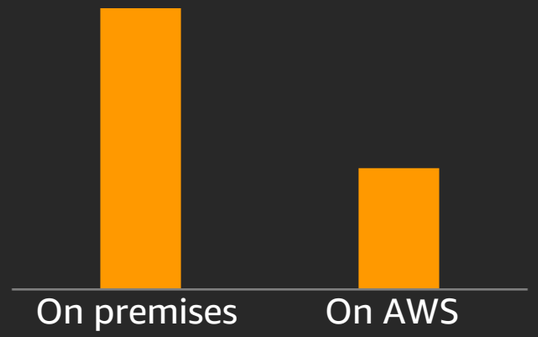
0.1% improvement = 525.6 minutes

x $2,250/minute

~$1.2M

Operational resilience: AWS benchmarking insights

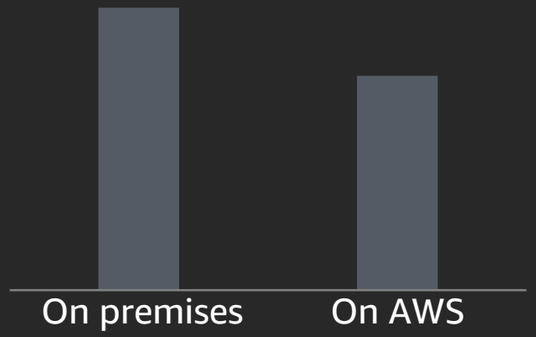
Downtime in minutes



56.7%

Decrease in downtime

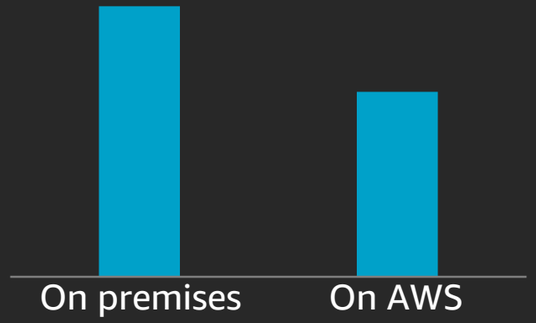
# of total monthly incidents



24.1%

Decrease in total monthly incidents

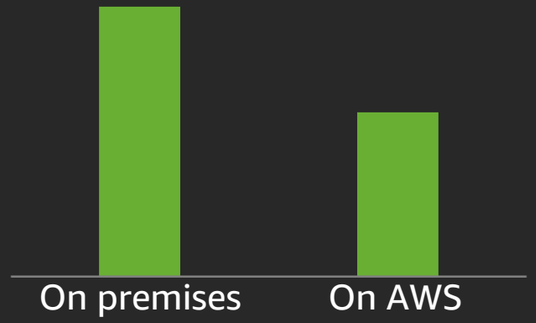
# of critical incidents



31.8%

Decrease in critical (P1/P0) incidents

Mean time to resolution (MTTR) in minutes



39.3%

Decrease in MTTR

Source: AWS Cloud Economics Benchmarking

Cloud Value Framework

Business agility

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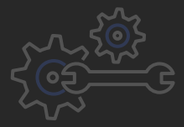

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DOW JONES

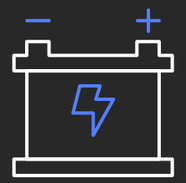
"Using AWS helps Dow Jones to be more agile in developing revenue-generating products. Thanks to AWS, we now build more products and spend less time running a data center. **Our overall product development velocity has increased by at least 30 percent.**"

—Stephen Orban, Chief Information Officer & Global Head of Technology

Keys to business agility

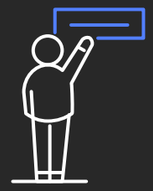
Culture of innovation

See change as a positive; empower all employees to identify opportunities for improvement



Cost and speed of experimentation

Lowering the cost of failure results in more experiments and more opportunities for success



Take advantage of external opportunities

Growth of third-party innovations has been dramatic over the past 5–10 years; those able to incorporate these capabilities quickly have an advantage

Business agility

Innovate faster while reducing failure costs

Traditional software delivery lifecycle and average % of time spent at each step*

Requirements & analysis	22%
Design	15%
Build	23%
Integration & test	17%
Deploy	12%
Maintain	11%

*META Group/Gartner research

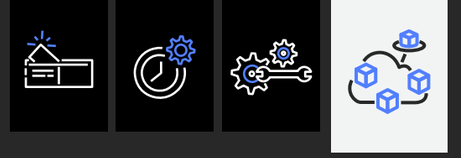
Cloud benefits

Simplify requirement design by leveraging built-in operational solutions (e.g., scaling, security) and hundreds of AWS and third-party services and solutions to deliver cloud-native products

Increase the speed of build and test through continuous integration and delivery pipelines, and **lower the cost** of spinning up experimentation by shutting down environments or services quickly

Eliminate deployment wait time with automated application development and smaller deployment batches

Reduce maintenance cost and **simplify operations** with AWS providing IT infrastructure services, and with AWS or third-party-managed service options



Business agility

Track and measure KPIs

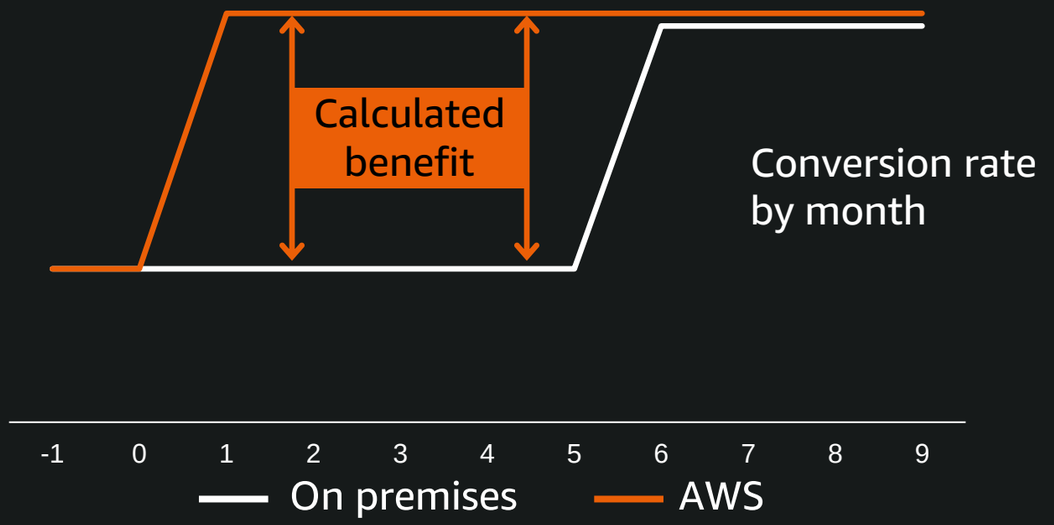
KPI	
New applications launched per year	Mean time to resolution (MTTR) in hours
Time to market for new applications	Response time to defects (hours)
Time to provision new environments (days)	Customer retention (%)
Deployment frequency (revs/year)	Adoption of new features (%)
Time to deploy to production (weeks)	Value per release ($ revenue potential)
Time to deploy to test (days)	Employee retention (%)
Features per release	Employee absenteeism (%)
Total # of incidents or defects	Employee NPS or satisfaction
Percentage of total defects found in test	Customer NPS or satisfaction

Business agility

Example of the value of time to market (TTM)

Customer-facing **application** for a subscriber-based company

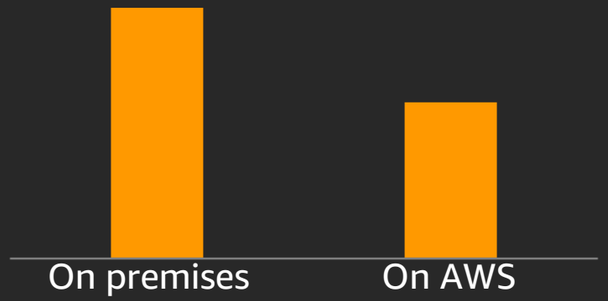
1. TTM — 6 months → 1 month
2. Clicks per month — 10K
3. LTV of uplift — $1K
4. Conversion uplift — 10%



Total clicks		x	Conversion uplift	x	$LTV	=	Value
Clicks per month	10,000						
# of months	x 5						
Total clicks	50,000	x	10%	x	$1,000	=	**$5,000,000**

Business agility: AWS benchmarking insights

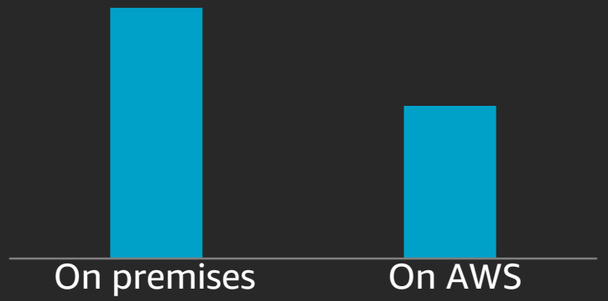
TTM for new applications in days



37.7%

Decrease in TTM for new features and applications

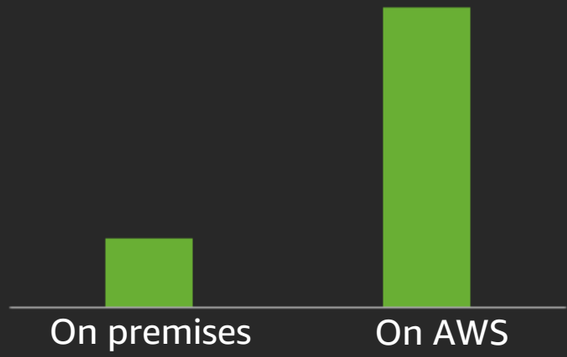
Time to deploy codes to production in days



39.3%

Decrease in time to deploy to production

Code deployment frequency



341.5%

Increase in code deployment frequency

Source: AWS Cloud Economics Benchmarking

Live Nation: Realized value with AWS

Cost savings (TCO)

18% initial TCO savings

40% reduction in TCO through cost optimization after first year

58% reduction in TCO to date

Staff productivity

50% reduction in traditional IT tasks

10x improvement in # of new projects

Improved automation and backup processes with managed services

Operational resilience

99.9% vs. 99.999% availability

Improved security posture

Near-zero performance complaints

Business agility

10x increase in innovation pipeline

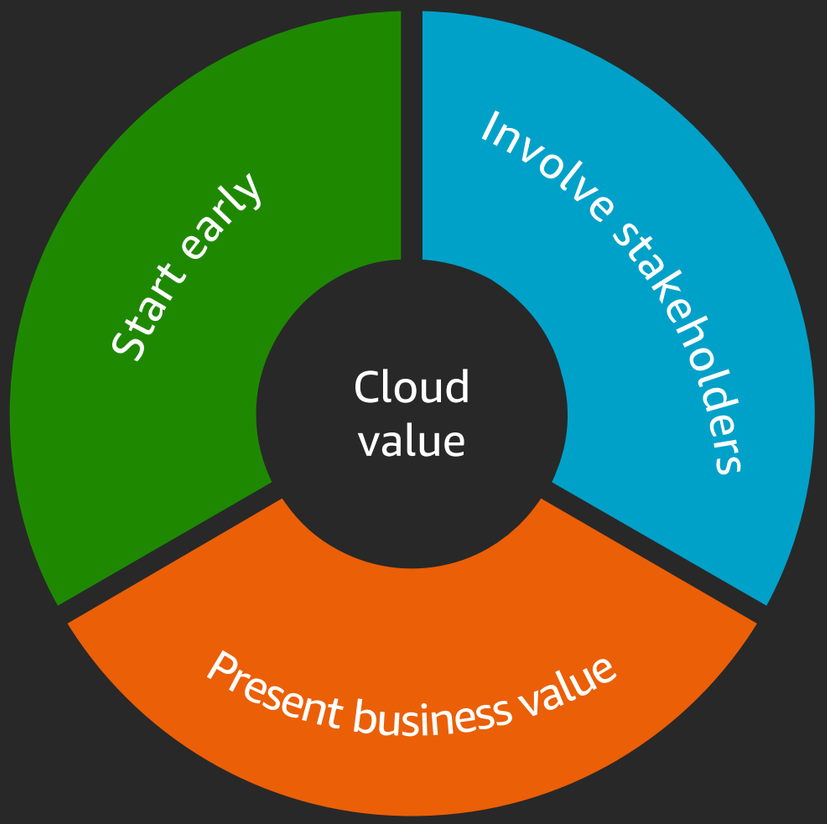
Rapid experimentation

90%+ business user satisfaction with cloud services

Progress

Internal migration + **17 months** + **Focus** = **118 applications in the cloud** & **58% TCO savings**

Best practices for communicating the cloud value



Start the business case process early in the decision-making process

Involve the right stakeholders (Finance, Procurement, IT, Engineering, Business), and build the case in multiple iterations with them

Assign value to areas that are hard to quantify, like business agility

Present the overall value, not just TCO

Learn to build cloud fluency in your enterprise

Resources created by the experts at AWS to help you build the skills you need

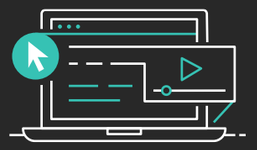

Cost savings (TCO)


Staff productivity


Operational resilience


Business agility

Be ready for global cloud transformation with a custom training strategy


Digital training


Classroom training


AWS Certification


Enterprise resources


Talent pipeline

Visit our resources for enterprises page at https://aws.training/enterprise

Thank you!

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