CLOUD MANAGEMENT CHALLENGES – FROM CLIENTS TO CONTRACTS

FINANCIAL WORLD OF INFORMATION TECHNOLOGY

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ABSTRACT

- CLOUD CAME INTO MOST ORGANIZATIONS AS A WHISPER, SUDDENLY APPEARING ONLY WHEN IT GAINED A SIGNIFICANT MASS. OFTEN IT WAS THE LAST TO KNOW ABOUT SERVICES BEING USED. TODAY CLOUD IS NOT JUST A USER SERVICE BUT ALSO A PROVIDER OF COMPUTING RESOURCES FOR THE DATA CENTERS AND APPLICATION DEVELOPMENT. WITH MULTIPLE PROVIDERS AND ENDLESS OPTIONS, MANAGING IN THESE HYBRID ENVIRONMENTS IS COMPLEX. MOST COMPANIES FIND THEY MUST BUILD UNIQUE SKILLS TO MONITOR CONTRACT TERMS AND CONDITIONS. THIS SESSION WILL COVER SOME OF THE CHALLENGES COMPANIES ARE FACING AND DEFINE KEY AREAS OF CONTRACTS TERMS TO CONSIDER.

DISRUPTION IN ACTION

Data center was King!

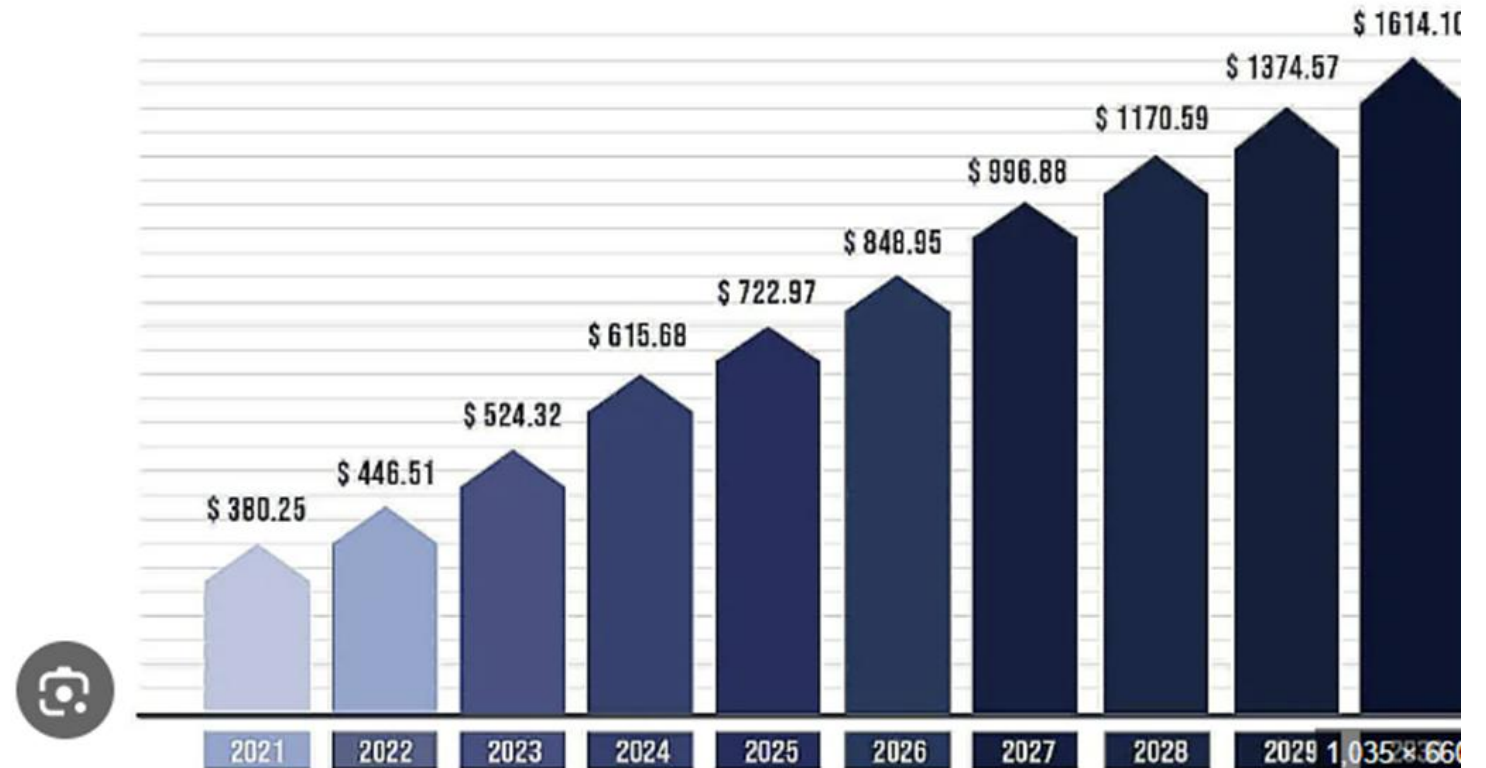- WE BUILT THEM
- WE CONSOLIDATED THEM

Cloud DISRUPTION

- processing is anywhere
- storage is everywhere

IS THE WHOLE WORLD CLOUDY?

CLOUD COMPUTING MARKET SIZE, 2021 TO 2030 (USD BILLION)

- 2021: $ 380.25
- 2022: $ 446.51
- 2023: $ 524.32
- 2024: $ 615.68
- 2025: $ 722.97
- 2026: $ 848.95
- 2027: $ 996.88
- 2028: $ 1170.59
- 2029: $ 1374.57
- 2030: $ 1614.10

PRECEDENCE RESEARCH

Top 7 cloud computing statistics for 2025

TOP 7 CLOUD COMPUTING STATISTICS FOR 2025

- 94% OF ENTERPRISE ORGANIZATIONS USE CLOUD COMPUTING.

- OVER 60% OF ALL CORPORATE DATA IS IN CLOUD STORAGE.

- GLOBAL SPENDING ON CLOUD SERVICES WILL REACH $1.3 TRILLION IN 2025.

- AMAZON WEB SERVICES(AWS) DOMINATES THE CLOUD MARKET, WITH A 31% MARKET SHARE IN 2024.

- COMPANIES WASTE AS MUCH AS 32% OF THEIR CLOUD SPEND.

- OVER A THIRD OF CLOUD DATA BREACHES RESULTED FROM MISCONFIGURATION OR HUMAN ERROR.

- 83% OF ENTERPRISE CIOS PLANNED TO REPATRIATE AT LEAST SOME WORKLOADS IN 2024.

50+ Fascinating Cloud Computing Statistics for 2025
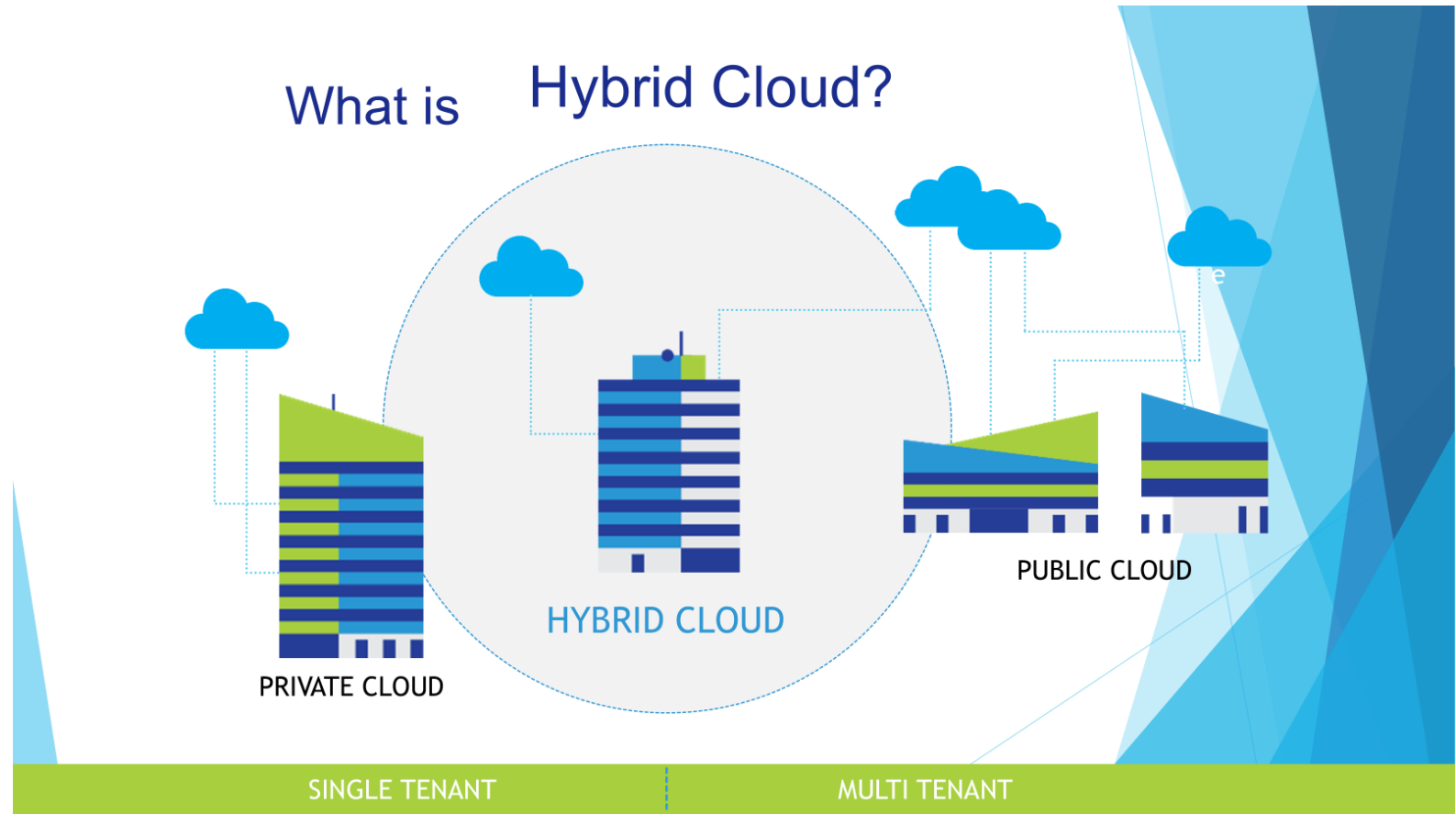December 23, 2024 **by Soundarya Jayaraman G2**

MULTI-CLOUD ENVIRONMENTS INCREASE CHALLENGES

What is Hybrid Cloud?

HYBRID CLOUD

PRIVATE CLOUD

PUBLIC CLOUD

SINGLE TENANT

MULTI TENANT

CLOUD TODAY CAN BE DEFINED IN THREE CATEGORIES

- MULTICLOUD
  - MULTIPLE PROVIDERS

- HYBRID
  - PUBLIC/PRIVATE MIX

- PRIVATE CLOUD
  - MORE RARE

CHALLENGE TODAY: CLOUD IS A WAY OF LIFE

Enterprise public cloud adoption rates

	Running significant workloads	Running some workloads	Experimenting	Plan to use
Azure	47%	33%	11%	4%
AWS	47%	30%	10%	6%

Legend: Running significant workloads · Running some workloads · Experimenting · Plan to use

https://www.cloudzero.com/wp-content/uploads/2023/12/image-11.webp
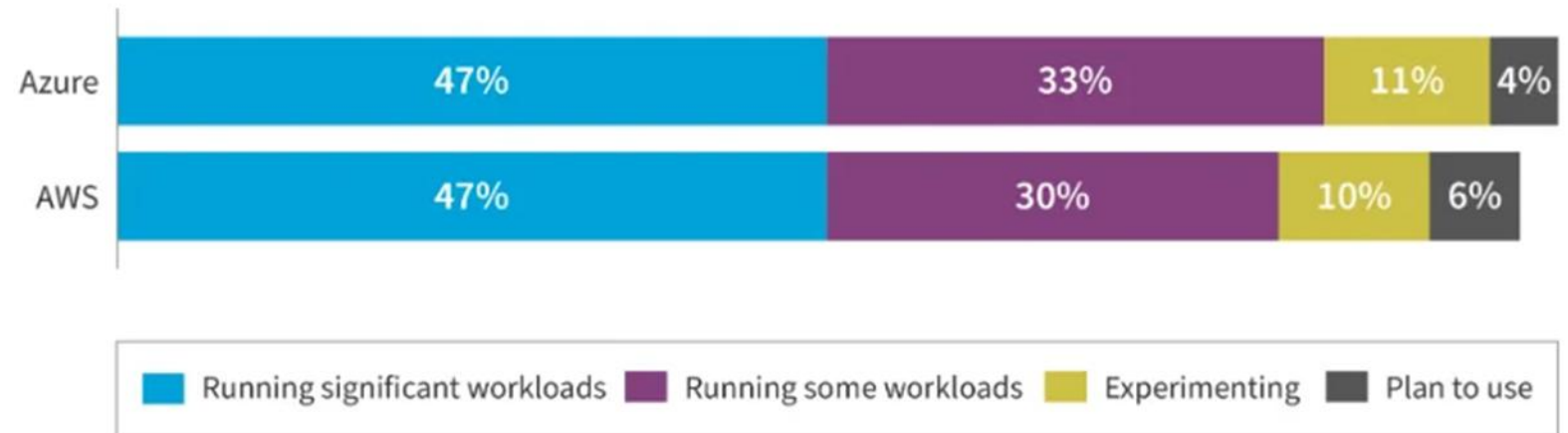
AMAZON WEB SERVICES DOMINATES WITH 34% MARKET SHARE (SOURCE: SYNERGY RESEARCH GROUP)

Cloud Provider Market Share Trend (IaaS, PaaS, Hosted Private Cloud). Source: Synergy Research Group
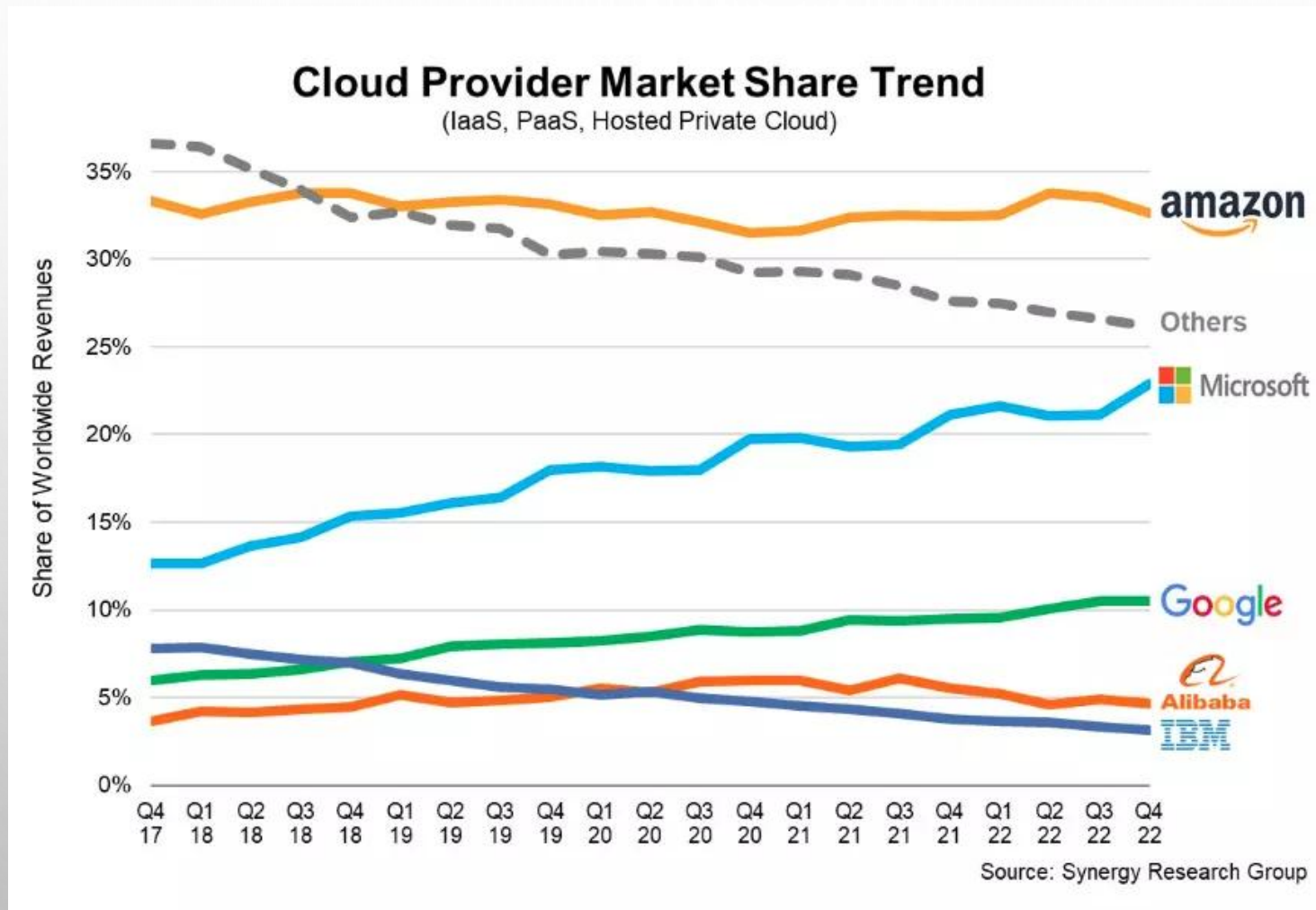
SOURCE G2

HYBRID CLOUD IS ON THE RISE

- 73% OF COMPANIES HAVE ADOPTED A HYBRID CLOUD APPROACH.

- 36% OF COMPANIES USE MULTIPLE PRIVATE AND PUBLIC CLOUD, WHILE 29% OF ORGANIZATIONS USE MULTIPLE PUBLIC AND AT LEAST ONE PRIVATE CLOUD, INDICATING A STRONG HYBRID CLOUD APPROACH.

- 56% OF COMPANIES WITH MORE THAN $500 MILLION IN REVENUE HAVE ADOPTED A HYBRID CLOUD APPROACH.

- 7 OUT OF 10 IT LEADERS THINK IT'S DIFFICULT TO REALIZE THE FULL POTENTIAL OF A DIGITAL TRANSFORMATION WITHOUT A SOLID HYBRID CLOUD STRATEGY.

CLOUD SECURITY

TODAY 48%OF COMPANIES STORE CONFIDENTIAL DATA ON CLOUD CLOUDWARDS TRENDS 2021, SAMINA

HEALTH RECORDS MAKE UP 23.2% OF SENSITIVE DATA IN THE CLOUD (SANS INSTITUTE)
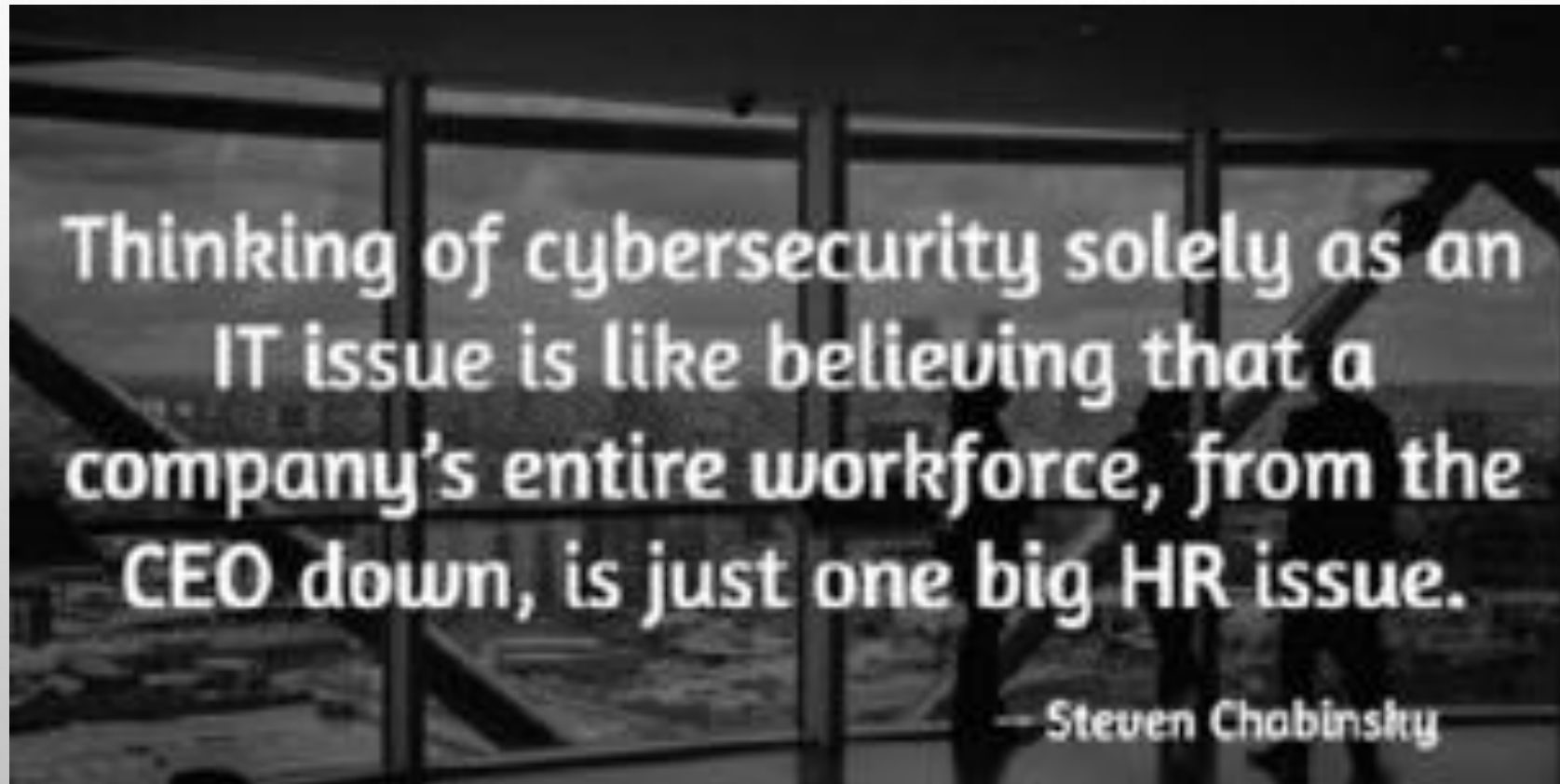
- HEALTHCARE PROVIDERS ARE LEVERAGING THE CLOUD TO COLLECT, ANALYZE, SHARE, AND TAKE ACTION ON VARIOUS DIAGNOSES MORE QUICKLY. DIGITAL HEALTH ACCESS HELPS PATIENTS RECEIVE THE CARE THEY NEED, INCLUDING QUICK REFERRALS AND INFORMATION EXCHANGES THAT CAN SAVE THEIR LIVES.

Are you currently storing any of the following sensitive or regulated (compliance-related) data in the public cloud? *Select all that apply.*

Category	Percentage
Business records (finance and accounting)	54.4%
Employee records	48.9%
Business intelligence	45.6%
Customer personal information	35.9%
Customer financial information	32.5%
Intellectual property	29.5%
Health records	23.2%
Customer payment card information	22.4%
National security or law enforcement data	9.7%
Student records	8.9%
Other	5.1%

Figure 4. Sensitive Data in the Cloud

The number one reason people say they won't use cloud is security (2015)

Thinking of cybersecurity solely as an IT issue is like believing that a company's entire workforce, from the CEO down, is just one big HR issue.

— Steven Chabinsky

SECURITY IN THE CLOUD TODAY

- 88% OF CLOUD BREACHES ARE DUE TO EMPLOYEES – NOT CLOUD PROVIDERS
  - (CLOUDWARDS TRENDS 2021, SAMINA)

HOWEVER. . .

6 IN 10 CXOS SAY CLOUD COMPUTING IMPROVES SECURITY (SOURCE: ORACLE)

- SECURITY IS THE TOP BENEFIT OF CLOUD COMPUTING, ACCORDING TO 60% OF C-SUITE EXECUTIVES — AHEAD OF COST SAVINGS, SCALABILITY, EASE OF MAINTENANCE, AND SPEED.

FINDING CLOUD SPEND REMAINS A MAJOR CHALLENGE

HOW DO YOU

*MANAGE **DEMAND** YOU CAN'T*

PREDICT

*WITH **SUPPLY** YOU CAN'T CONTROL?*

I know where all the Cloud is!

(are you sure?)

Shadow IT

Dropbox

Mobility Computing

SaaS

AWS

Bring your own Device

THE TYPICAL EMPLOYEE IS DABBLING IN 36 CLOUD-BASED SERVICES IN A DAY ON AVERAGE

SHADOW IT STATISTICS
(G2 TRACK RESOURCES, 10/28/20 SCOTT JULIO)

- 80% OF WORKERS ADMIT TO USING SAAS APPLICATIONS AT WORK WITHOUT GETTING APPROVAL FROM IT.

- SHADOW IT CLOUD USAGES ESTIMATED TO BE 10X THE SIZE OF KNOWN CLOUD USAGE.

- THE AVERAGE COMPANY HAS 975 UNKNOWN CLOUD SERVICES.

- MOST COMPANIES HAVE OVER 108 KNOWN CLOUD SERVICES.

- 35% OF EMPLOYEES SAY THEY NEED TO WORK AROUND THEIR COMPANY'S SECURITY POLICY TO GET THEIR JOB DONE.

- ROUGHLY 21% OF ORGANIZATIONS DO NOT HAVE A POLICY AROUND THE USE OF NEW TECHNOLOGY.

- 67% OF TEAMS HAVE INTRODUCED THEIR OWN COLLABORATION TOOLS INTO AN ORGANIZATION.

- 82% OF TEAMS HAVE PUSHED BACKED ON IT OR MANAGEMENT ABOUT WHICH COLLABORATION TOOLS SHOULD BE USED.

CLOUD COST CONTROL

MANAGING COSTS IS THE BIGGEST CHALLENGE TO CLOUD ADOPTION (SOURCE: FLEXERA)

- AMONG THOSE SURVEYED FOR THE STATE OF THE CLOUD REPORT, MANAGING CLOUD COSTS AND SECURITY WERE THE MAIN REASONS FOR NOT FULLY EMBRACING CLOUD COMPUTING. THIS IS TRUE FOR BOTH ENTERPRISES AND SMBS.

CLOUD COSTS ARE HIGHER THAN EXPECTED FOR 6 IN 10 ORGANIZATIONS (SOURCE: CLOUDZERO)

AS COMPANIES INVEST MORE IN THE CLOUD, ONLY 4 IN 10 ORGANIZATIONS HAVE THEIR CLOUD COSTS AROUND WHERE THEY EXPECT.

- SOME 490 OUT OF 1,000 RESPONDENTS SAID THEIR CLOUD COSTS WERE A LITTLE HIGHER THAN WHERE THEY SHOULD BE WHILE 110 REPORTED CLOUD COSTS WERE WAY TOO HIGH.

49% OF CLOUD-BASED BUSINESSES STRUGGLE TO CONTROL CLOUD COSTS (SOURCE: ANODOT)

THERE'S MORE:

- IN 54% OF CASES, CLOUD WASTE STEMS FROM A LACK OF VISIBILITY INTO CLOUD COSTS.

- ACCORDING TO 44% OF EXECUTIVES, AT LEAST A THIRD OF THEIR CLOUD SPEND IS WASTED.

- COMPLEX CLOUD PRICING IS A CHALLENGE FOR 50% OF RESPONDENTS.

- NEARLY HALF OF RESPONDENTS SAID MANAGING MULTI CLOUD ENVIRONMENTS IS CHALLENGING.

- THESE CHALLENGES MAKE CONTROLLING CLOUD COSTS EVEN MORE DIFFICULT.

42% OF CIOS AND CTOS CONSIDER CLOUD WASTE THE TOP CHALLENGE (SOURCE: ZESTY)

SOME 42% OF CIOS AND CTOS STRUGGLE TO MANAGE RESOURCE USAGE.

OFTEN, WASTE OCCURS FROM OVERPROVISIONING AND INABILITY TO SCALE RAPIDLY. THIS LED TO A 67% ANNUAL INCREASE IN AMOUNTS ALLOCATED TO CLOUD SERVICES, INCREASING TO 47% IN 2022 FROM 29% IN 2021.

- ALSO, 58% OF RESPONDENTS SAID THE MOST CHALLENGING ASPECT OF MANAGING CLOUD COSTS WAS FINDING THE RIGHT CLOUD OFFERING FOR THEIR WORKLOAD.

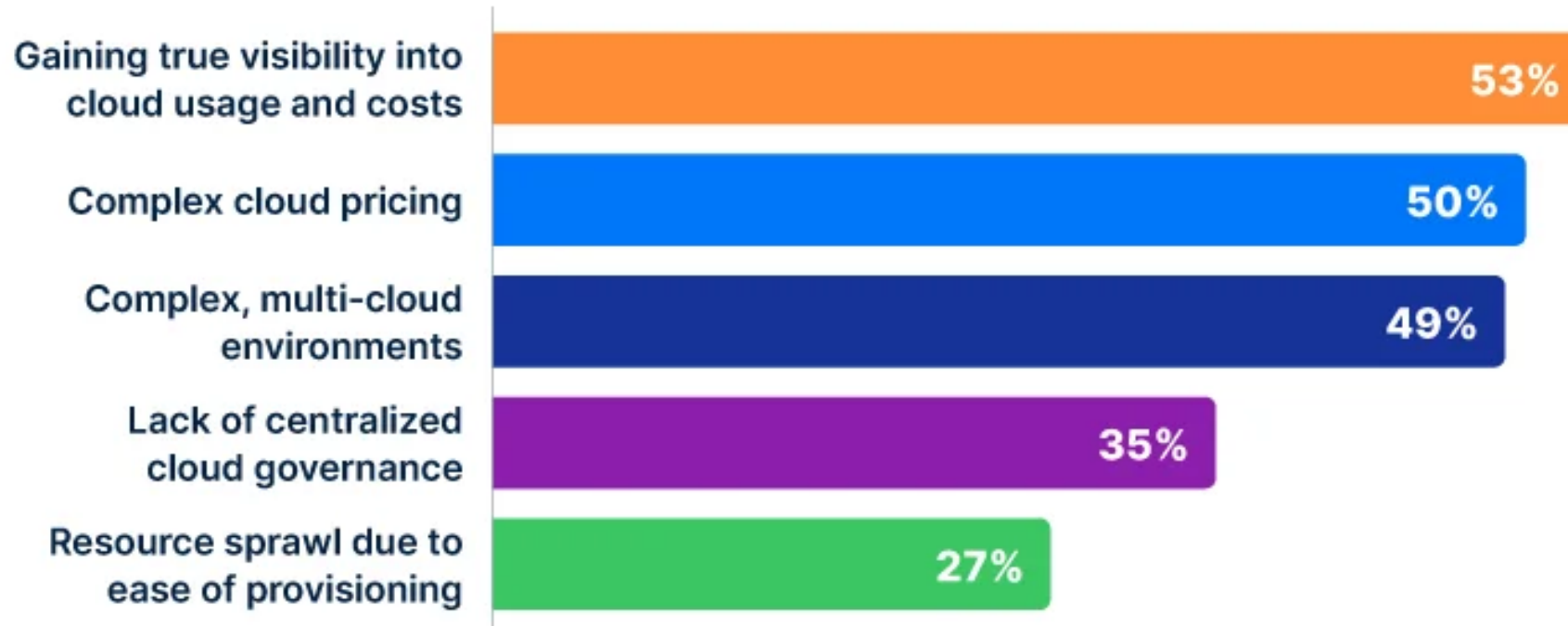75% OF ORGANIZATIONS REPORT AN INCREASE IN CLOUD WASTE (SOURCE: STORMFORGE)

- MOST COMPANIES REPORTED THAT AS THEIR CLOUD SPEND INCREASED, SO DID THEIR CLOUD WASTE. THE STORMFORGE SURVEY OF 131 IT PROFESSIONALS SHOWS CLOUD WASTE COULD BE AS HIGH AS 47% OF A CLOUD BUDGET.

32% OF A CLOUD BUDGET WENT TO WASTE (SOURCE: FLEXERA)

- CLOUD WASTE AVERAGED 30% OF COMPANIES' CLOUD BUDGETS IN 2021, ACCORDING TO FLEXERA. IN 2022, THAT FIGURE JUMPED TO 32%. CONSIDERING GARTNER'S ESTIMATION THAT CLOUD SPEND REACHED NEARLY $500 BILLION IN 2022, THAT 2% INCREASE MIGHT REPRESENT A MASSIVE AMOUNT OF MONEY IN WASTED CLOUD SPEND.

LOW VISIBILITY IS A MAJOR BARRIER TO CLOUD ADOPTION (SOURCE: FORTNET)

Q1 What are your top challenges to controlling cloud costs?*

- Gaining true visibility into cloud usage and costs — 53%
- Complex cloud pricing — 50%
- Complex, multi-cloud environments — 49%
- Lack of centralized cloud governance — 35%
- Resource sprawl due to ease of provisioning — 27%

*Respondents could select all that apply

KNOWING WHERE TO LOOK FOR SPENDING INEFFICIENCIES

Over- and under-provisioned resources

Orphan VMs (Zombies)

Runaway resources
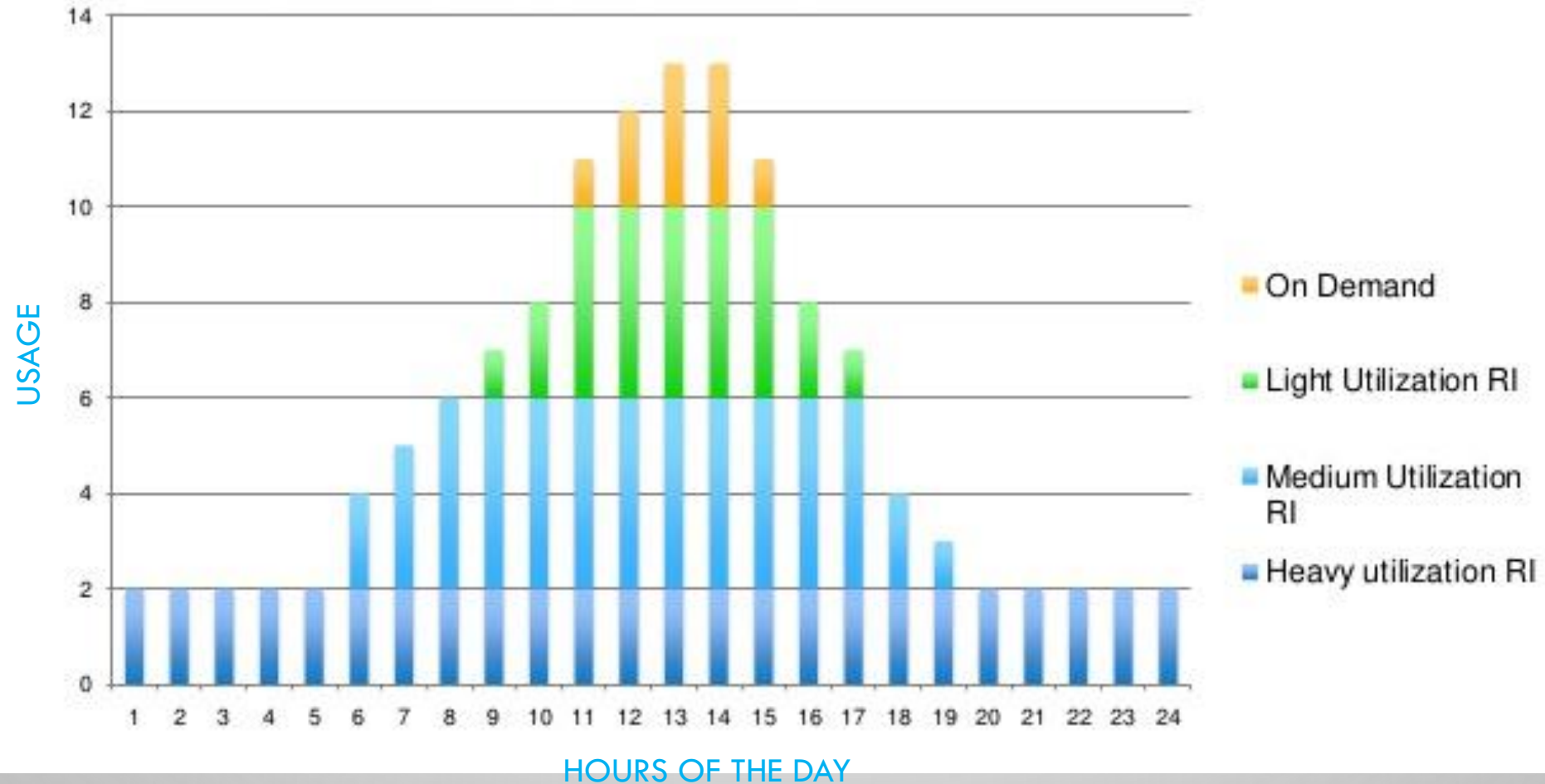
Inappropriate pricing plan

Lack of accountability

OVER- AND UNDER-PROVISIONED RESOURCES

- STUDY BY FLEXERA FOUND 39% OF INSTANCES WERE RUNNING AT 40% OR LESS MOST WERE UNDER 20%

- BUYING TOO MANY RESERVED INSTANCES RESULTS IN WASTE

OPTIMIZING COSTS WITH RESERVED INSTANCES

ORPHAN VM'S (ZOMBIES)

- NOT TURNING OFF INSTANCES

- LEAVING STORAGE DATA AFTER APPLICATIONS SHUT DOWN

- FAILING TO MANAGE TEMPORARY INSTANCES

  - DEMO OR TEST INSTANCE

- ABANDONED ACCOUNTS

RUNAWAY RESOURCES

- FAILURE TO MONITOR USAGE

  - LEFT RUNNING OVER WEEKENDS

  - ABANDONED STORAGE

  - FAILURE TO DECOMMISSION WORKLOADS AT END OF PROJECT

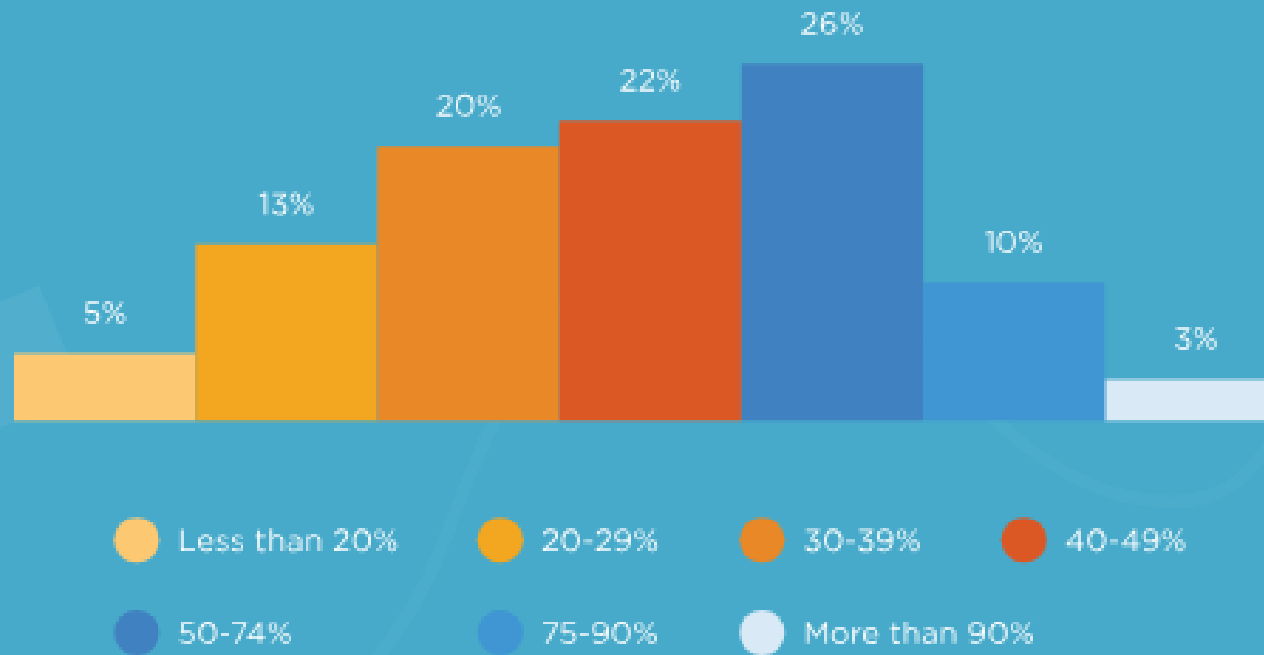# INAPPROPRIATE PRICING PLAN

- UNDERSTAND BUSINESS NEEDS
  - RETENTION BACKUP ACCESSIBILITY SECURITY

- DISCOUNTS
  - EXISTING CAPACITY
  - VOLUMES

LACK OF ACCOUNTABILITY

- WHO USED THIS? OWNERSHIP ISSUES
  - LACK OF OR INEFFECTIVE TAGGING

ITFMA 2025 St Paul   © Penny Collen 2025

I DON'T BUY MUCH CLOUD. I CAN MANAGE THE BILLS USING EXCEL.

- MICROSOFT EXCEL CURRENTLY SUPPORTS 1,048,576 ROWS. IF YOU SPEND MORE THAN 5 THOUSAND DOLLARS A MONTH, A CSV EXTRACT OF YOUR MONTHLY REPORT FROM THE CLOUD PROVIDER, WITH HOURLY RECORDS, WILL PROBABLY HAVE OVER 5 MILLION ROWS. DO YOU SEE THE PROBLEM?

THE EVOLUTION OF CLOUD SERVICES:

- ORIGINAL IDEA WAS TO SUPPLEMENT CAPACITY
    - NO COMMITMENT

- PROVISIONING ON DEMAND
    - THE NEED FOR SPEED

- NOW WE HAVE 3-YEAR CONTRACT FOR CAPACITY COMMON

- CLOUD CONTRACT MANAGEMENT IS A MAJOR PAIN POINT

CONTRACT TERMS AND CONDITIONS

SERVICE LEVEL AGREEMENTS

PERFORMANCE UPTIME RESPONSE TIME

METRIC DRIVEN

SECURITY AND PRIVACY

ACCESS CONTROL ENCRYPTION REGULATORY REQUIREMENTS

PRICING AND PAYMENTS

DISASTER RECOVERY AND BUSINESS CONTINUITY BACKUP REDUNDANCY FAILOVER

WHILE TOPICS ARE LIKE ALL TECHNOLOGY ACQUISITIONS, CLOUD TERMS NEED SPECIAL SKILLS

- WHO IS THE CLOUD SERVICE PROVIDER
  - THIRD PARTY VENDORS
  - DEFINE WHO IS RESPONSIBLE

- REQUIREMENTS FOR MIGRATIONS, SIZING

- TERMINATION AND DISPUTES
  - LIABILITY

    DESTRUCTION OF DATA

- INTELLECTUAL PROPERTY RIGHT

- DATA RETENTION

- WHO OWNS THE DATA

- DATA DESTRUCTION