HOW TO SURVIVE AND THRIVE AMID DIGITAL DISRUPTION

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CLOUD FIRST STRATEGY

FASTER INNOVATION

3

REDUCE COSTS

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ALL IN THE QUEST OF DIGITAL LEADERSHIP

LEADING

CONTINUOUSLY INNOVATE TO STAY LEADER

TRANSFORMING

ACCELERATE TRANSFORMATION TO BECOME LEADER

EMERGING

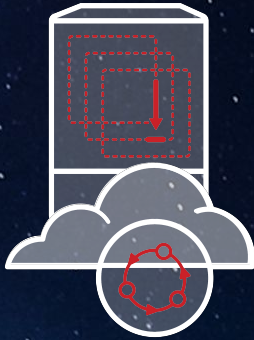ADOPT NEW TECHNOLOGY TO TRANSFORM

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WHAT DO DIGITAL LEADERS DO DIFFERENTLY?

"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change"

— Charles Darwin (1809-1882)

DIGITAL LEADERS TRANSFORM ACROSS
TECHNOLOGY, PROCESS & PEOPLE

NEXT-GENERATION ARCHITECTURE

New ways of developing, delivering, and integrating systems & applications

AGILE PROCESSES

New ways of doing things across both IT and the business

COLLABORATIVE CULTURE

New ways of working together and building organizations

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DIGITAL LEADERS START WITH A CLEAR VISION
BASED ON BUSINESS OUTCOMES AND A PARTNERSHIP ACROSS THE ORGANIZATION

BARCLAYS

"We need to deliver products to market quicker than ever and be more responsive to market trends. We want to become the bank of the future."

SIMON CASHMORE
HEAD OF PaaS MIDDLEWARE ENGINEERING
BARCLAYS

Source: Red Hat customer success story, *Barclays adopts agile DevOps culture to stay competitive.*
Accessed Jun 2018, *https://www.redhat.com/en/success-stories/barclays*

DIGITAL LEADERS ARE HIGH PERFORMERS

I.T. THROUGHPUT MEANS MOVING QUICKLY TO ANSWER DEMAND

High-performing organizations deploy code

46x

more frequently than low-performing ones

Source: Google Cloud + Dora, _Accelerate: 2019 State of DevOps_. August 2018.
.https://cloudplatformonline.com/2018-state-of-devops.html

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VISION AND SPEED BRING RESULTS

Schiphol
Amsterdam Airport

GOAL:
Improve its passenger experience and become
the best digital airport

Launched a new cloud platform in

10 days

and cut development time for new

services and APIs by

50%

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CATHAY PACIFIC

Increased application development throughput
by a factor of
10

from 20 to 200 changes a day

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DIGITAL LEADERS USE AGILE METHODOLOGIES & EMBRACE DEVOPS

I.T. THROUGH IT ... OVER DEMAND

In today's rapidly changing environment, **the use of agile development methods is essential if companies are to adopt digital solutions quickly.**

Boston Consulting Group, AUGUST 10, 2017

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BRITISH COLUMBIA

The Government of British Columbia established the BC Developers' Exchange, a forum for open source collaboration with the private sector and its citizens, including offering citizens real-time access to project information and feedback opportunities.

RESULTS

- Improves support for agile, collaborative development with DevOps

- Reduced deployment times from months to hours

- Improved balance of innovation with security

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DIGITAL LEADERS USE DATA TO ADAPT
AND MAKE DECISIONS QUICKLY

CLIMB

"We've had researchers from Gambia running analysis using the system, and we had teams sequencing data on OpenStack and Ceph last year during the Ebola outbreak in Africa. This is a large-scale, remote resource that we can ship data to, from anywhere."

DR. THOMAS CONNOR
CO-INVESTIGATOR
CLOUD INFRASTRUCTURE FOR MICROBIAL BIOINFORMATICS (CLIMB)

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DIGITAL LEADERS USE DATA TO ADAPT
WITHOUT SACRIFICING DATA PROTECTION

"We want users to be able to run and control workloads in an environment that is safe and secure from a corporate point of view. Users should be able to run analysis using software from another organization but with the necessary data protection."

DR. TIM CUTTS
HEAD OF SCIENTIFIC COMPUTING
WELLCOME TRUST SANGER INSTITUTE

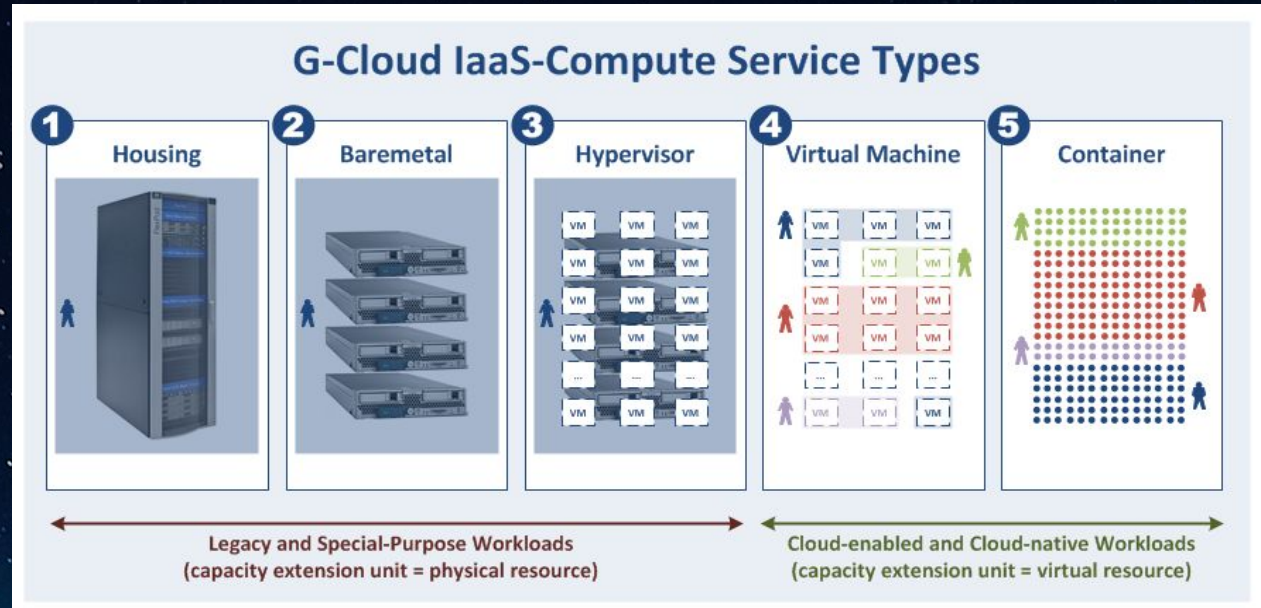# DIGITAL LEADERS USE OPEN SOURCE
TO LEVERAGE FAST INNOVATION AND THE GLOBAL COMMUNITY OF DEVELOPERS

IaaS

CLOUD

MOBILE

PaaS

DATA & ANALYTICS

MANAGEMENT & AUTOMATION

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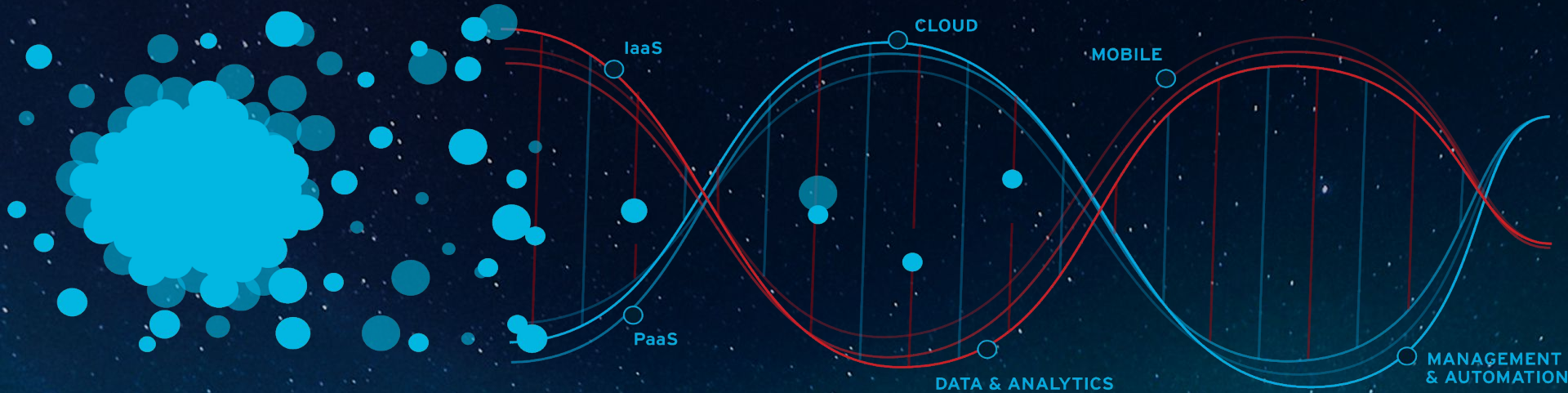
HYBRID CLOUD POWERED BY OPEN SOURCE

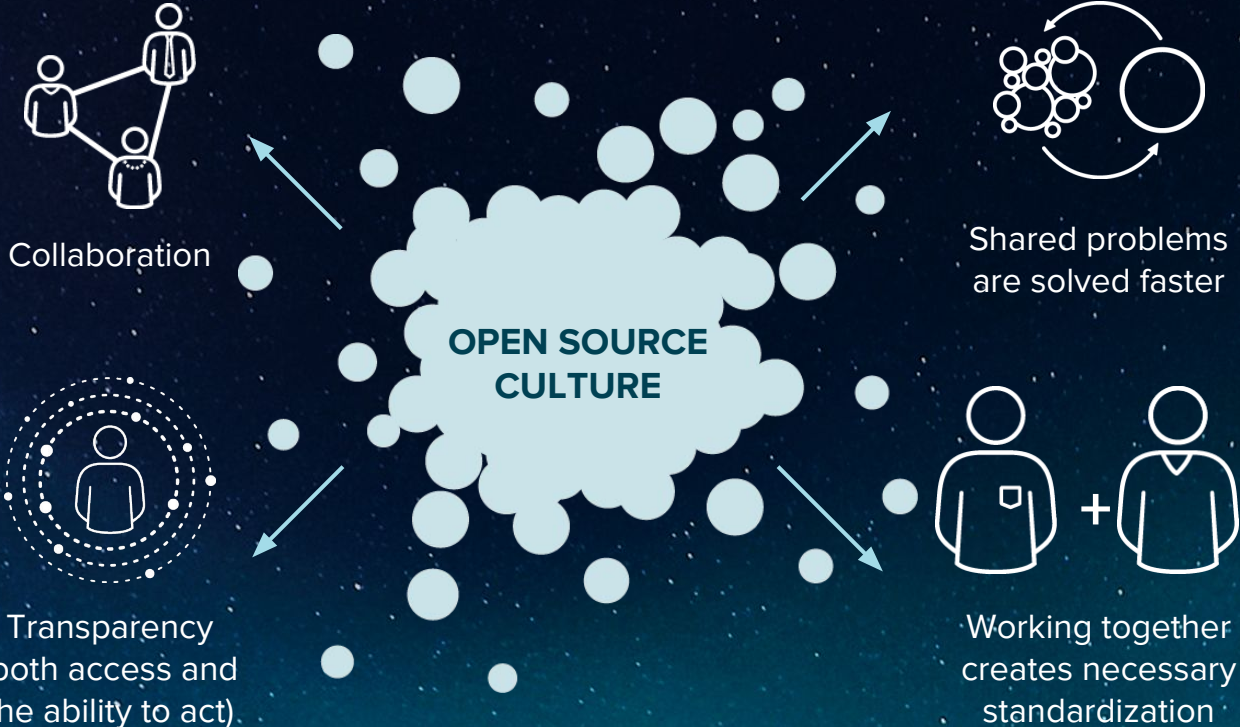I.T. THROUGHPUT MEANS MOVING QUICKLY TO ANSWER DEMAND

"We value collaboration. Open source matches our culture, but we also need a platform we can use to innovate. We can't innovate as well within a closed ecosystem."


G-Cloud IaaS-Compute Service Types

Dirk Deridder, Operational Director, Infrastructure, Systems, Service & Support, SMALS

THE OPEN SOURCE CULTURE

Collaboration

Shared problems
are solved faster

**OPEN SOURCE
CULTURE**

Transparency
(both access and
the ability to act)

Working together
creates necessary
standardization

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DIGITAL LEADERS EMBRACE CULTURAL CHANGES

THE BIGGEST BLOCKER TO DIGITAL LEADERSHIP IS OFTEN CULTURAL NOT TECHNOLOGICAL
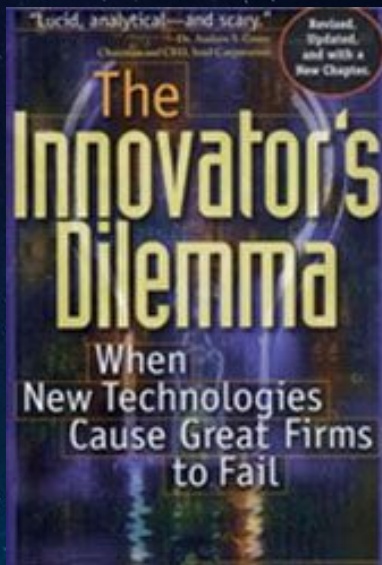
"Wise business people concluded that it was best not to hurry to switch from making 70 cents on the dollar on film to maybe five cents at most in digital."

Larry Matteson, former Kodak executive

Source: the *Economist*

http://www.claytonchristensen.com/books/the-innovators-dilemma/

TOO MUCH STRUCTURE RESTRICTS SPEED

"Leaders will be able to operate as true digital leaders only when they shake their reliance on structure as the primary tool of organizational design and instead start assigning accountabilities in ways that instigate focused responses to opportunities."

JEANNE ROSS
MIT Sloan Management Review
June 2018

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DIGITAL LEADERS DISRUPT

AND USUALLY TAKE RISKS OTHERS AREN'T WILLING TO TAKE

Lego's restructuring encouraged innovation, & focusing on digital business turned this almost-bankrupt brickhouse into the "Apple of toys."

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DISRUPTION CAN BE FOR "GOOD"

I.T. THROUGHPUT MEANS MOVING QUICKLY TO ANSWER DEMAND

GOVTECH
GOVERNMENT TECHNOLOGY
AGENCY OF SINGAPORE

"Technology is not our main objective. We are only interested in the people. We focus on applied usage to improve the quality of life, create new opportunities, and build a better social fabric."
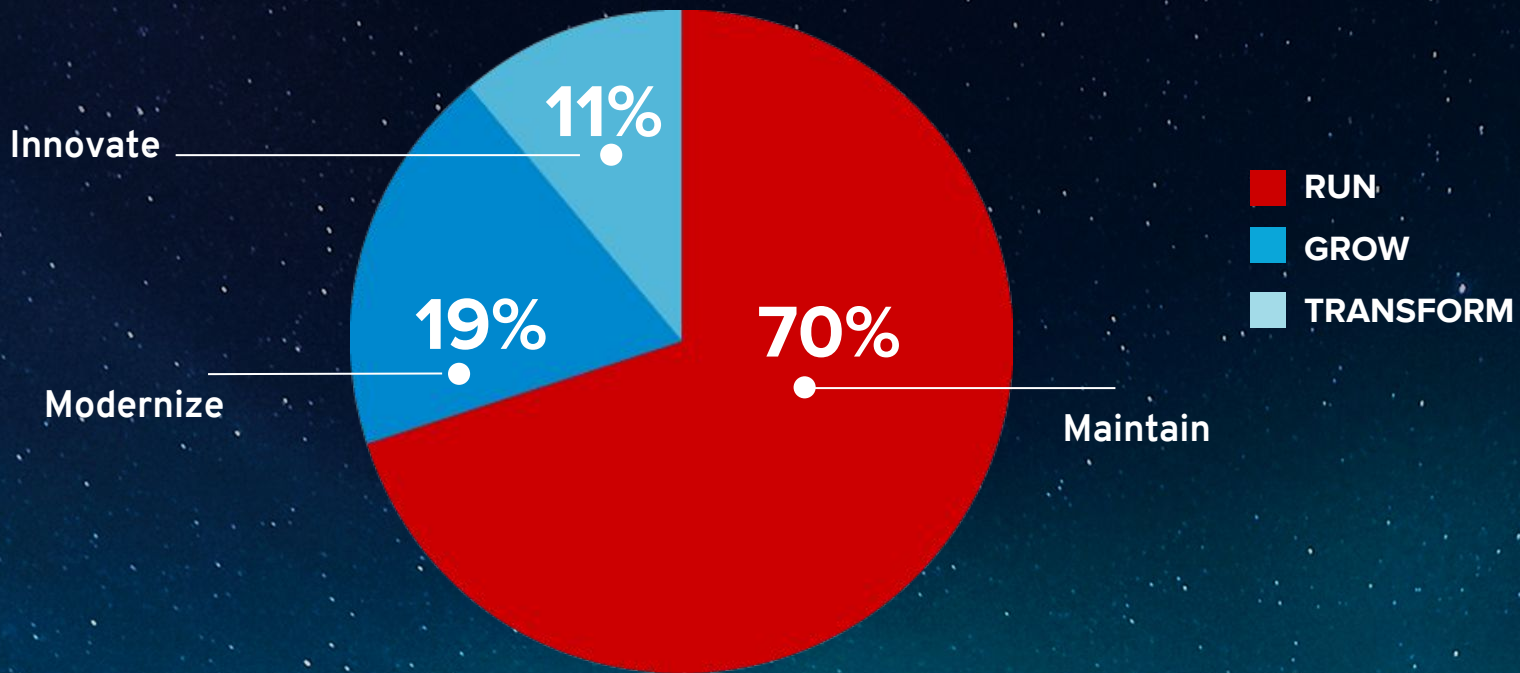
MARK LIM
Director, Government Digital Services,
Government Technology Agency
May 2017

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DIGITAL LEADERS FOCUS ON THE APPLICATION AND DEVELOPERS!

I.T. THROUGHPUT AND SPEED TO ANSWER DEMAND

WHAT'S KEEPING US FROM INNOVATING?

MOST OF OUR INVESTMENT IS WHAT WE'VE ALWAYS DONE

Innovate — **11%**

Modernize — **19%**

70%

Maintain

RUN

GROW

TRANSFORM

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HOW CAN WE OPTIMIZE & INNOVATE AT SAME TIME?

IT'S REALLY ABOUT BEING ABLE TO DO MORE, FASTER

Optimize existing IT

Integrate applications, data, and processes

Use hybrid cloud infrastructure

Build cloud-native, containerized applications

Automate & manage all your IT

GAIN EFFICIENCIES
DRIVE AGILITY & INNOVATION

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IT CAN'T BE ONE OR THE OTHER

THE SCIENCE OF LEAN SOFTWARE AND DEVOPS

ACCELERATE

Building and Scaling High Performing
Technology Organizations

Nicole Forsgren, PhD
Jez Humble, and Gene Kim

with forewords by **Martin Fowler** and **Courtney Kissler**
and a case study contributed by **Steve Bell** and **Karen Whitley Bell**
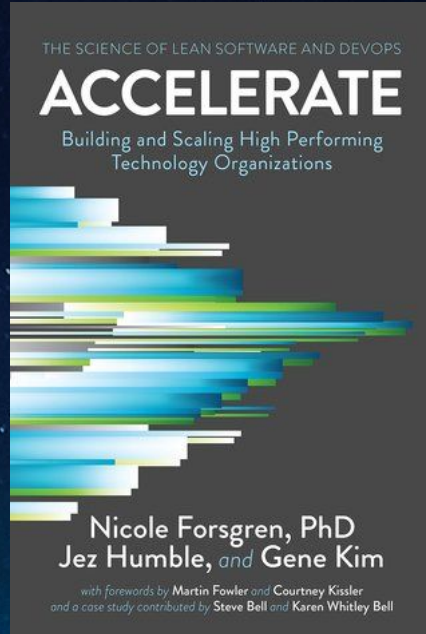
". . . evidence refutes the bimodal notion that you have to choose between speed and stability - instead, speed depends on stability, so good IT practices give you both."

Martin Fowler, Chief Scientist, ThoughtWorks
From the book "Accelerate: The Science Behind DevOps"

https://www.goodreads.com/book/show/35747076-accelerate

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STANDARDIZING CAN HELP YOU SCALE

ESTABLISHING CONSISTENT FABRICS OF YOUR ARCHITECTURE TO BUILD ON

TRADITIONAL INFRASTRUCTURE
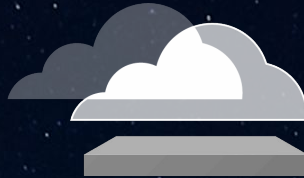
HYBRID & MULTI-CLOUD

CLOUD-NATIVE APP PLATFORMS

AUTOMATION

ORCHESTRATION

OS & CONTAINERS

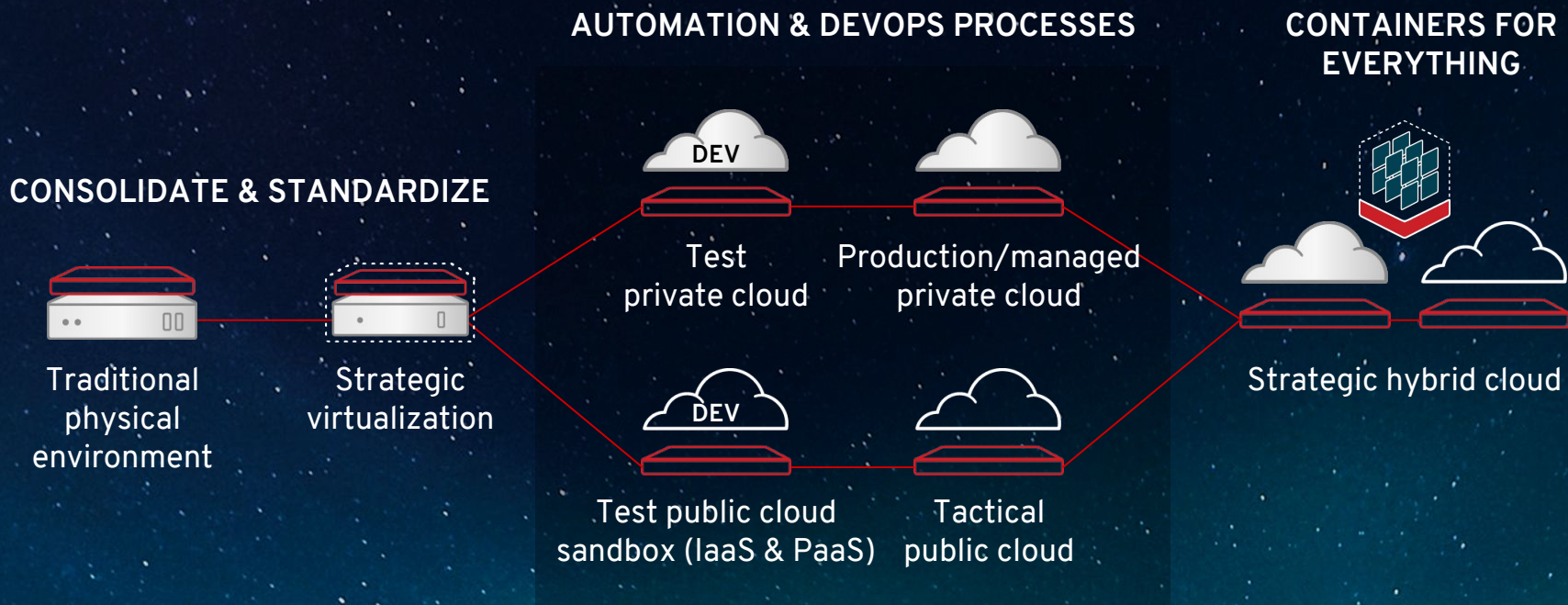VIRTUALIZATION

APIs / INTEGRATION

POLICIES & CONTROLS

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PARALLEL PATHS & A LOT OF TESTING

THIS IS WHAT IT LOOKS LIKE FOR ONE FINANCIAL CUSTOMER

AUTOMATION & DEVOPS PROCESSES

CONTAINERS FOR EVERYTHING

CONSOLIDATE & STANDARDIZE

Traditional physical environment

Strategic virtualization

DEV

Test private cloud

Production/managed private cloud

DEV

Test public cloud sandbox (IaaS & PaaS)

Tactical public cloud

Strategic hybrid cloud

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INSTEAD OF A CLOUD-FIRST STRATEGY...

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ALIGN WORKLOADS TO RIGHT INFRASTRUCTURE

BASED ON THE TECHNICAL AND BUSINESS CRITERIA AND REQUIREMENTS

LIFT & SHIFT
Legacy apps
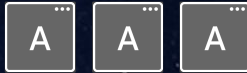
MODERNIZE
Business-critical apps

DEVELOP
Cloud-native apps

CONTAINER & DEVOPS PLATFORM
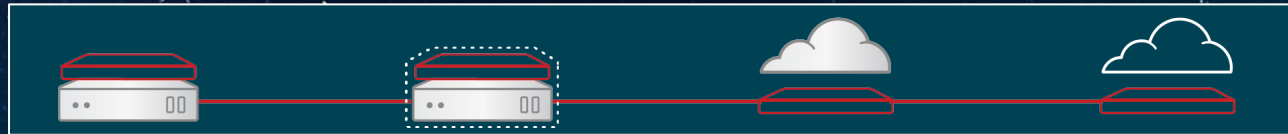
PHYSICAL

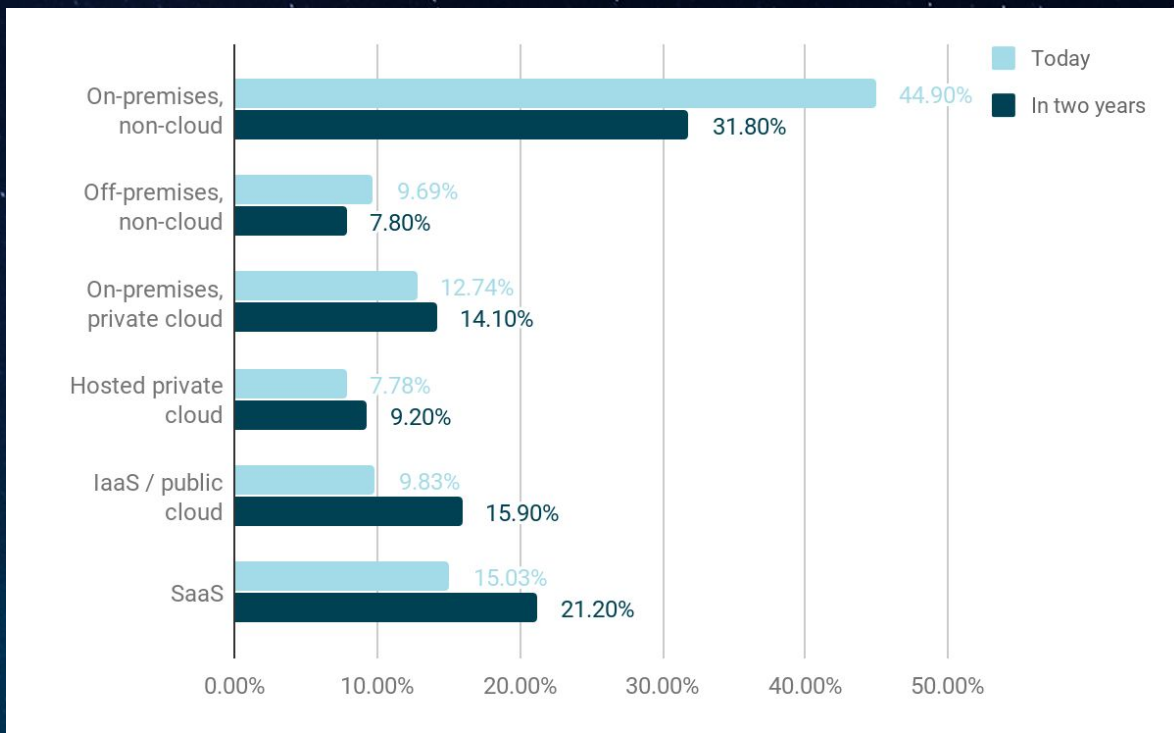VIRTUAL

PRIVATE
CLOUD

PUBLIC
CLOUD

SOME POSSIBLE APPLICATION CRITERIA
CREATE A PROCESS FOR ANALYZING AND CATEGORIZING APPLICATIONS

- Application Architecture
- Scalability
- Integration
- Data Replication
- Identify Management / Access Controls
- Network Latency
- Business criticality

- API infrastructure
- Security
- Compliance
- DR Architecture
- Application Licensing
- CPU Resource Usage
- Memory Intensive
- System Dependencies
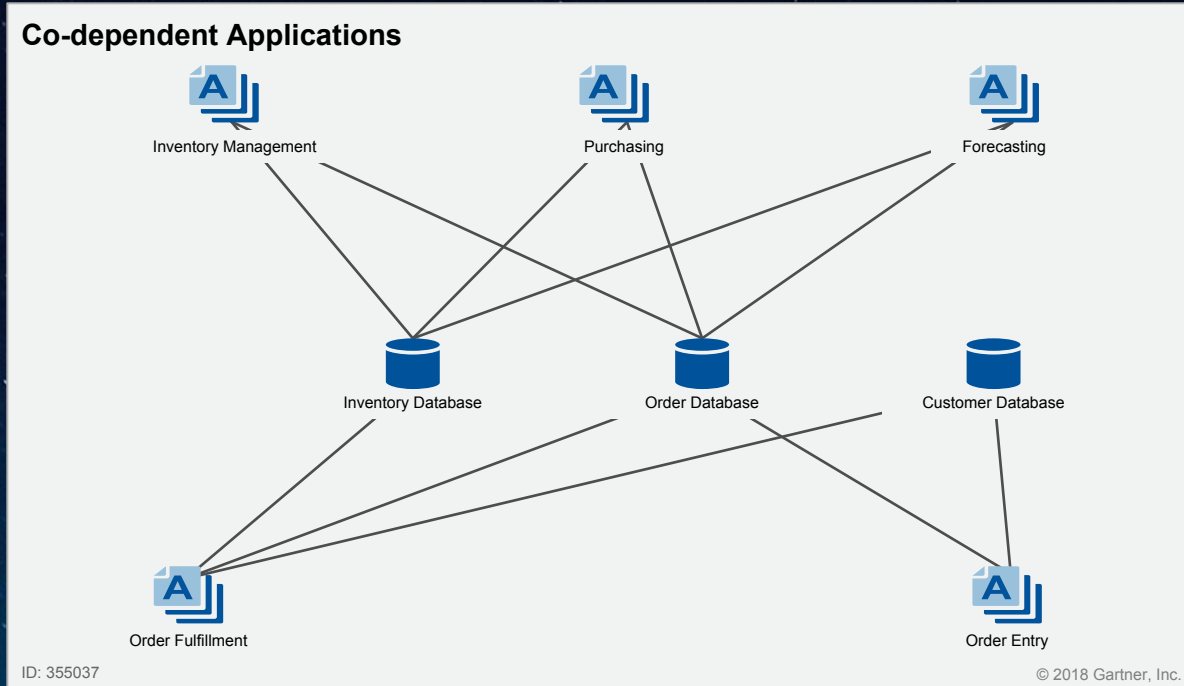- Etc. . . .

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ALIGN PRIORITIES, COST, CORE COMPETENCE

~ 10 to 15% of enterprise workloads are in the public cloud today

Legend: Today / In two years

Category	Today	In two years
On-premises, non-cloud	44.90%	31.80%
Off-premises, non-cloud	9.69%	7.80%
On-premises, private cloud	12.74%	14.10%
Hosted private cloud	7.78%	9.20%
IaaS / public cloud	9.83%	15.90%
SaaS	15.03%	21.20%

Nearly 80 percent of companies studied plan to have more than 10 percent of their workloads in public-cloud platforms in three years, according to McKinsey's 2017 global cloud cybersecurity research

Source: 451 Research, Voice of the Enterprise: Cloud Transformation, Workloads and Key Projects 2017

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APPLICATIONS DON'T LIVE ON AN ISLAND

THINK ABOUT THE DEPENDENCIES ACROSS APPLICATIONS, DATA, AND SYSTEMS

Co-dependent Applications

Inventory Management

Purchasing

Forecasting

Inventory Database

Order Database

Customer Database

Order Fulfillment

Order Entry

ID: 355037

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ASSESS YOUR OVERALL APPLICATION ENVIRONMENT

THE FUTURE REMAINS A HYBRID WORLD

Is your organization's cloud infrastructure deployment strategy a hybrid one?
Hybrid is defined as using a mix of both private and public cloud
infrastructure, where workload portability across environments is achieved.

60%

Of enterprises identify their
cloud strategy as hybrid

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OUR VISION: OPEN HYBRID CLOUD
ALL KINDS OF APPS AND ENVIRONMENTS, INCLUDING CONTAINERS

DEVELOPER TOOLING

APPLICATION PLATFORMS

INFRASTRUCTURE PLATFORMS

BARE METAL VIRTUAL PRIVATE CLOUD PUBLIC CLOUD

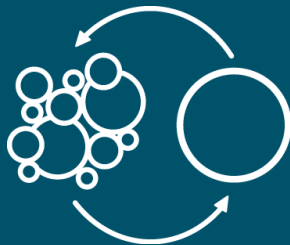SOFTWARE-DEFINED STORAGE

MANAGEMENT AND AUTOMATION

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BUILT ON TRUSTED LINUX WITH OPEN APIs
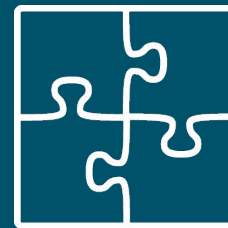
WHAT A RED HAT PARTNERSHIP BRINGS

STRENGTH IN LINUX

OPEN SOURCE LEADERSHIP

HYBRID CLOUD ECOSYSTEM

COMPREHENSIVE PORTFOLIO & PARTNERSHIPS

OUR PEOPLE & CULTURE

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DIGITAL DISRUPTION
IS A MATTER OF WHEN NOT "IF"

YOU MAY NOT REALIZE IT UNTIL IT'S TOO LATE

Faint signals with lots of noise

Emergence of a validated model

Critical mass of adoption achieved

At scale and mature

New model

Incumbent model

PROFIT

TIME

Source: Chris Bradley & Clayton O'Toole. *An Incumbent's Guide to Digital Disruption*. McKinsey Quarterly, May 2016.
http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/an-incumbents-guide-to-digital-disruption

WHERE ARE YOU TODAY?

EMERGING

ADOPT NEW TECHNOLOGY
TO TRANSFORM

TRANSFORMING

ACCELERATE TRANSFORMATION
TO BECOME LEADER

LEADING

CONTINUOUSLY INNOVATE
TO STAY LEADER

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MOST ORGANIZATIONS ARE STILL EMERGING

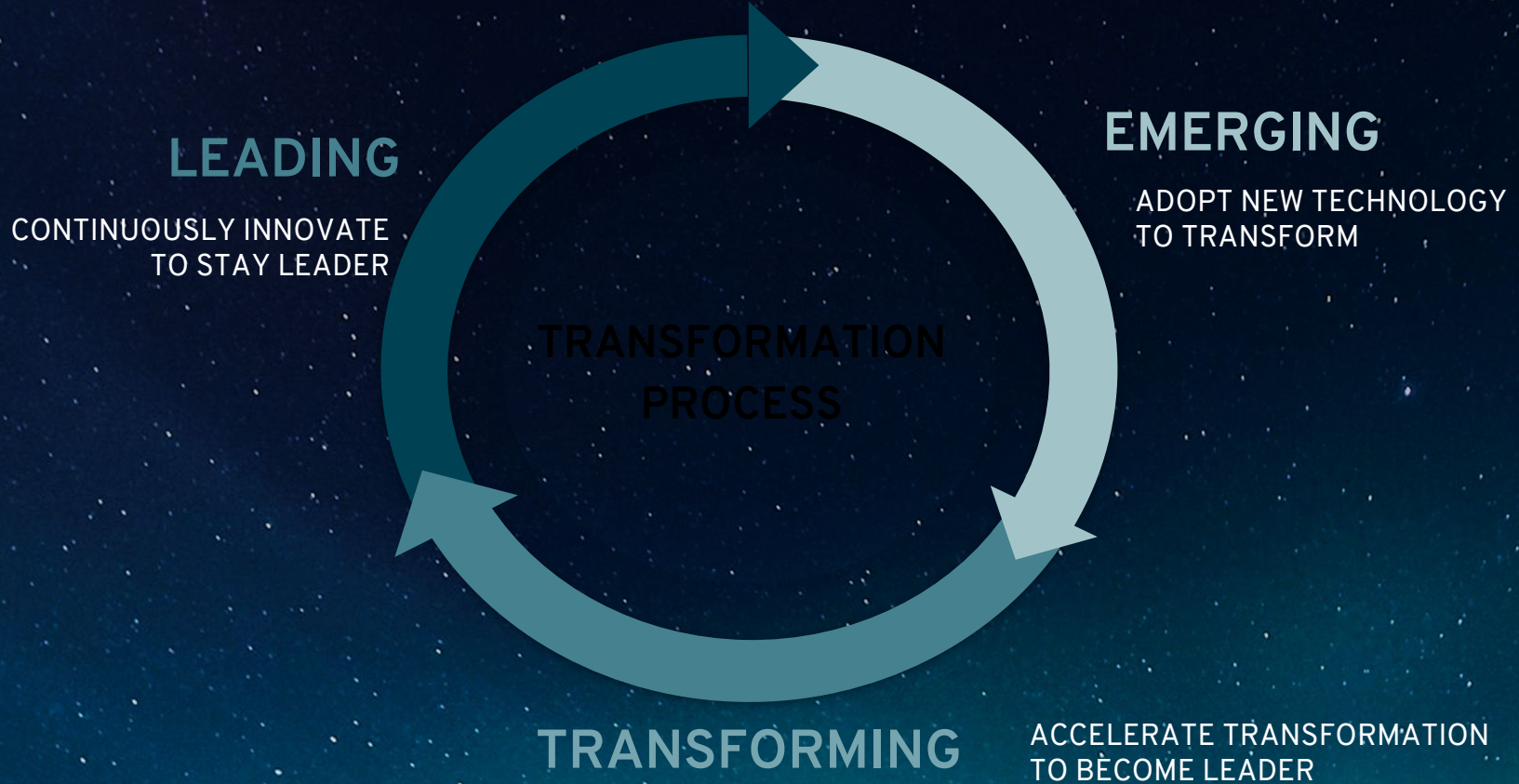**90%** of companies indicate they are engaged in some form of digitization.

Only 16% said their company has responded with a bold strategy and at scale.

IT'S AN ONGOING CYCLE THAT MUST CONTINUE

LEADING

CONTINUOUSLY INNOVATE
TO STAY LEADER

EMERGING

ADOPT NEW TECHNOLOGY
TO TRANSFORM

**TRANSFORMATION
PROCESS**

TRANSFORMING

ACCELERATE TRANSFORMATION
TO BECOME LEADER

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WHAT WOULD YOU DO DIFFERENTLY?

IF YOU ACTED LIKE YOU WERE BEING DISRUPTED NOW

Source: https://mbtskoudsalg.com/explore/death-star-laser-png/
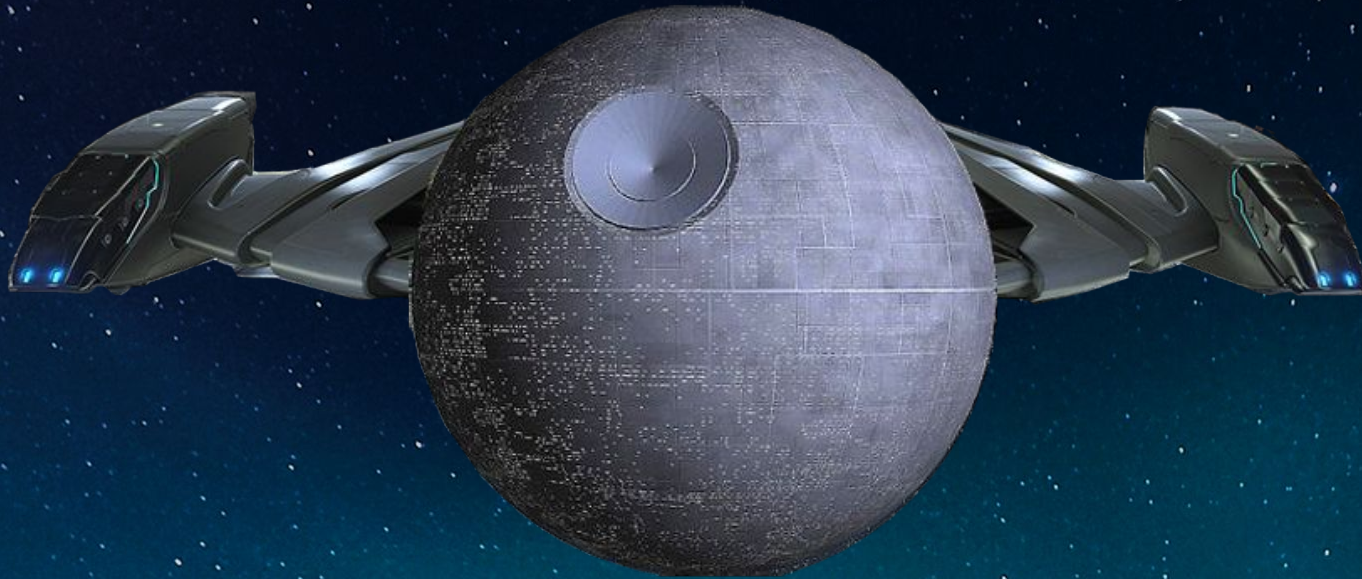
OR IF YOU WERE THE DISRUPTOR?

Source: Anton_Ivanov / Shutterstock.com

HISTORY WOULD SUGGEST YOU CAN DISRUPT . . .

Source: https://en.wikipedia.org/wiki/Second_Anglo-Dutch_War

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HISTORY WOULD SUGGEST YOU CAN DISRUPT . . .

Battle of Courtrai, 1302
1: French knight
2: Senior Flemish militiaman
3: Flemish urban militia crossbowman

https://en.wikipedia.org/wiki/Battle_of_the_Golden_Spurs

WHERE EVERYTHING CONNECTS & WORKS TOGETHER

ARTIFICIAL
INTELLIGENCE

API

PREDICTIVE
ANALYTICS

EVERYTHING-
AS-A-SERVICE

MICROSERVICES

AUTOMATION

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