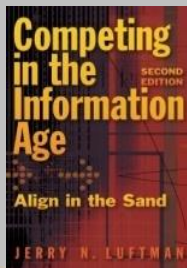# GLOBAL IT TRENDS & AI

12/12/24

JERRY LUFTMAN Ph.D.

luftman@hotmail.com   www.globaliim.com   LinkedIn Group: Future Role of IT

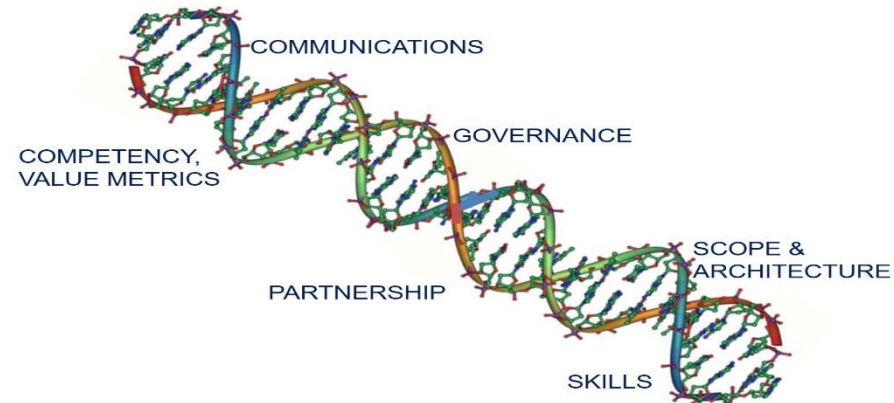# …it will be different

change

people need things values see
Information Technology

Global IT TRENDS

COMMUNICATIONS

GOVERNANCE

COMPETENCY, VALUE METRICS

SCOPE & ARCHITECTURE

PARTNERSHIP

SKILLS

Strategic Alignment Maturity

https://www.globaliim.com/global-it-trends-researc

https://www.globaliim.com/business-it-alignment

Share some of the recent insights with you today

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Perspective On Careers
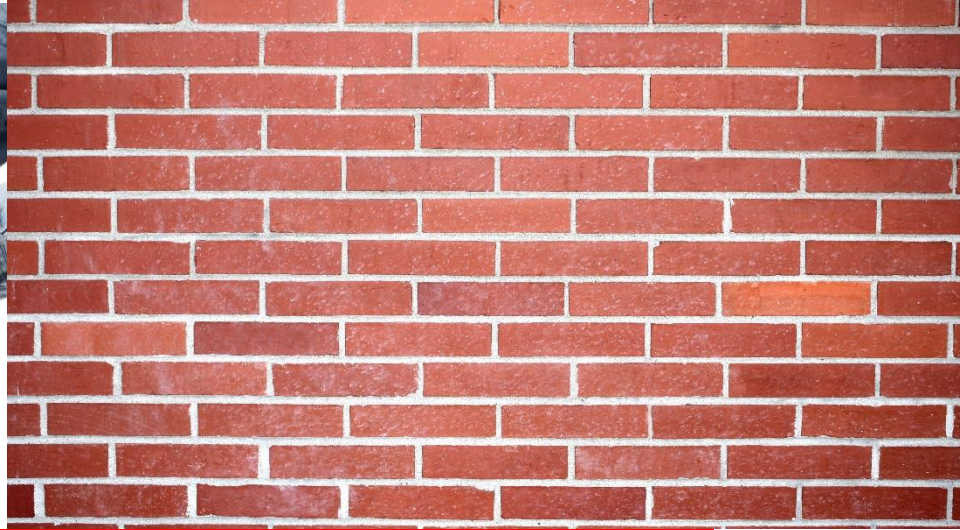
To begin a career you need to know how to lay bricks

Laying bricks   **vs building a wall**

vs building, house, or an entire city

To grow your career take a holistic view
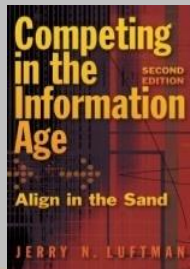
IT: Go beyond just technical skills!

Global Institute for IT Management

My goal is not for you to master how to address the future of IT or AI; it is to help you:

➢ Recognize that the dig**IT**al future is **VERY EXCITING** for those prepared

➢ Appreciate the essential elements for implementing and sustaining a truly strategically aligned dig**IT**al transformation in a timely & efficient/effective manner

If only we had that DeLorean from "Back to the Future" or H.G. Wells "Time Machine", it would make it so much easier to predict what technology trends will shape the future.

THE ONE THING WE KNOW ABOUT THE FUTURE IS

THAT IT IS COMING, &...

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IS THE DIGITAL TRANSFORMATION NEW?

2023, Taylor Swift

40 Years ago…..

January 3, 1983
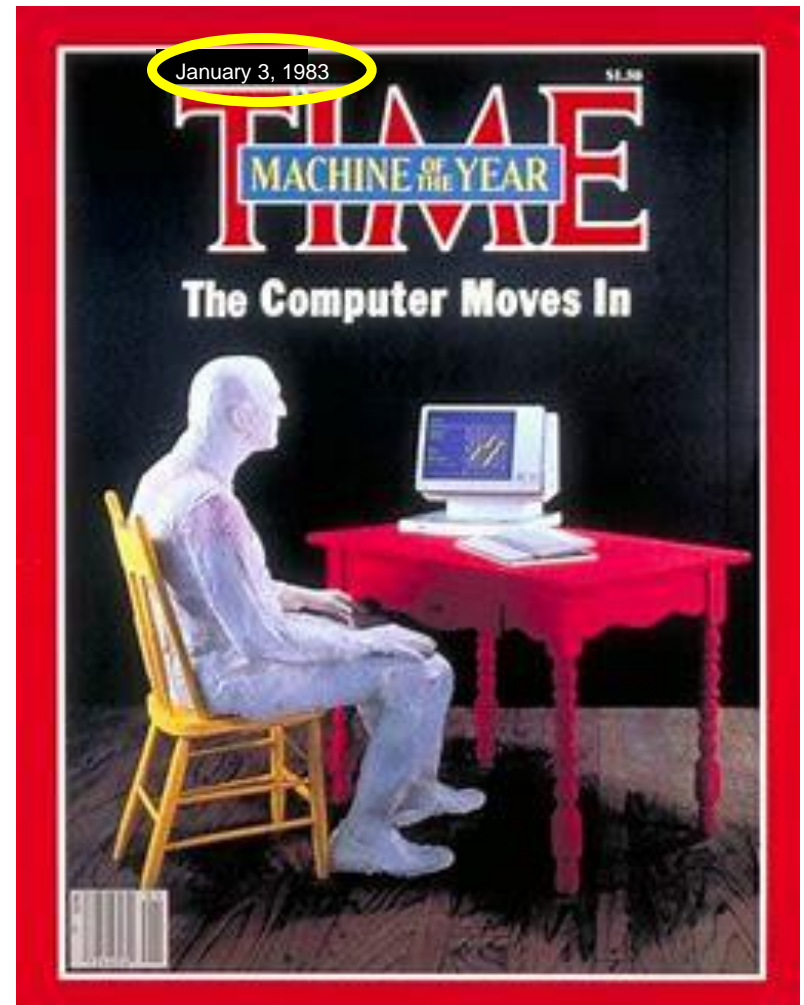
1990

2020

Covid

November 2007

iPhone 2007

But then there is the rare exceptions:

BIC Pen
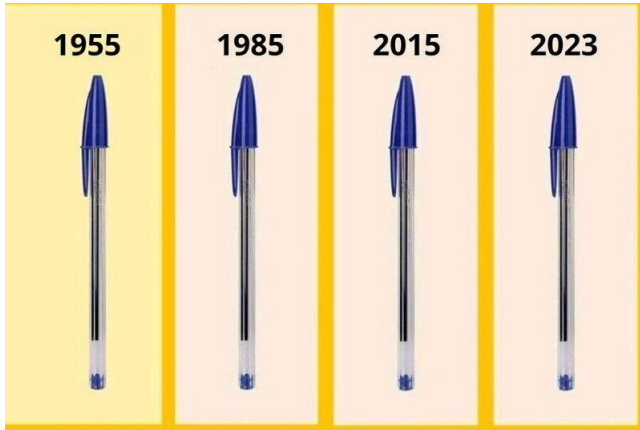
Swiss Army Knife

Levi's 501 Jeans

Zippo Lighter
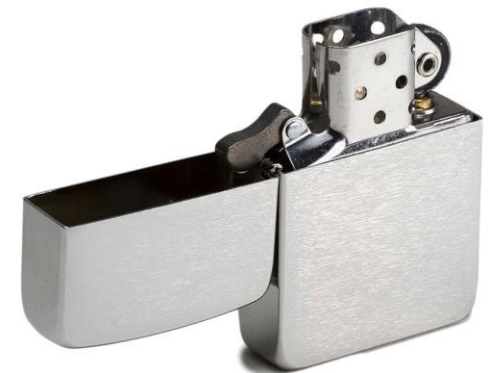
5 LARGEST U.S. COMPANIES
(REVENUE $ MILLIONS)

	2000	2010	2020	2024	
1	GM — $180	Walmart — $405	Walmart — $524	Walmart — $648	1
2	Walmart — $165	ExxonMobil — $383	amazon — $282	amazon — $575	2
3	ExxonMobil — $228	Chevron — $198	ExxonMobil — $265	Apple — $383	3
4	Ford — $162	GE — $150	Apple — $260	United Healthcare — $372	4
5	GE — $130	Bank of America — $134	CVS — $257	Berkshire Hathaway Inc. — $364	5
6				CVS — $358	6

https://fortune.com/fortune500

FORTUNE THROUGH THE YEARS

1955 - 1974 **1975 - 1994** **1995 - 2009** **2010 - 2024**

THE AGE OF INDUSTRY — FORTUNE

THE AGE OF GLOBALIZATION — FORTUNE

THE AGE OF THE CONSUMER — FORTUNE

THE AGE OF ALGORITHMS — FORTUNE
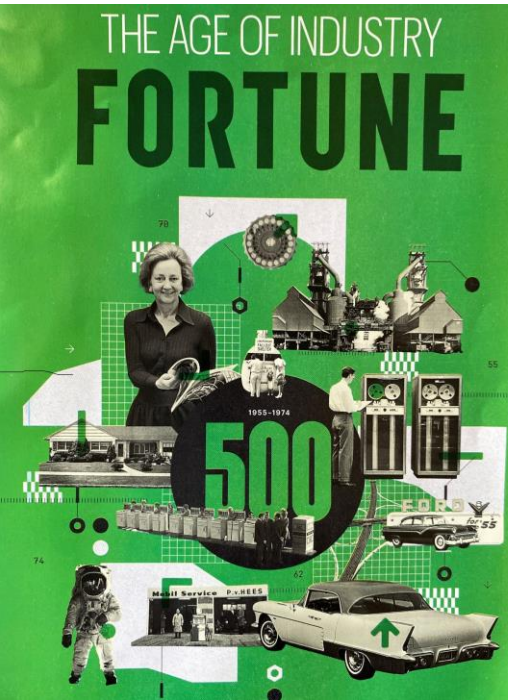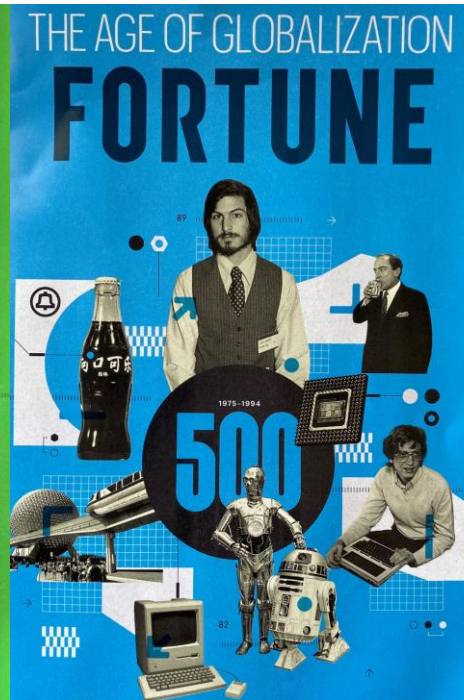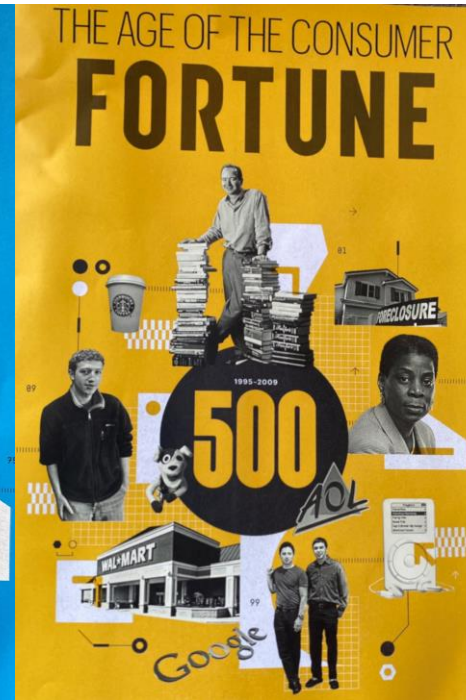
GM, GE, IBM   **MS, Apple, Chips**   **Walmart, Starbucks, Amazon, Facebook, Google**   **Smartphones, Netflix, Bitcoin, AI**
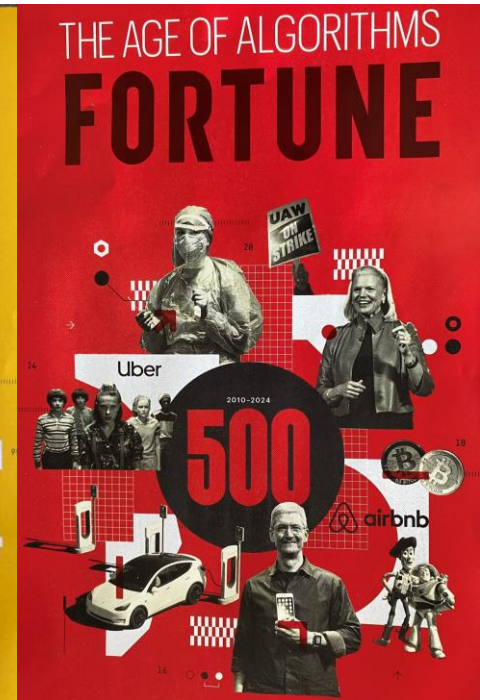
5 LARGEST U.S. COMPANIES
(REVENUE $ MILLIONS)

1955

1. GM — $98
2. ExxonMobil — $56
3. USS — $33
4. GE — $30
5. ESMARK STEEL GROUP — $25
   CHRYSLER — $21

2024

1. Walmart — $648
2. amazon — $575
3. Apple — $383
4. United Healthcare — $372
5. Berkshire Hathaway Inc. — $364
6. CVS — $358

Only 49 of the original 500 remain on the list

Lifespan of most large companies is only a few decades

https://fortune.com/fortune500

Adopter Categories Innovation Diffusion Theory

% Of Potential Adopters

Early Majority 34%

Late Majority 34%

Where is AI?

Early Adopters 13.5%

Laggards 16%

Pioneers 2.5%

-3   -2   -1   0   1   2   3

Time from Mean(S.D.)
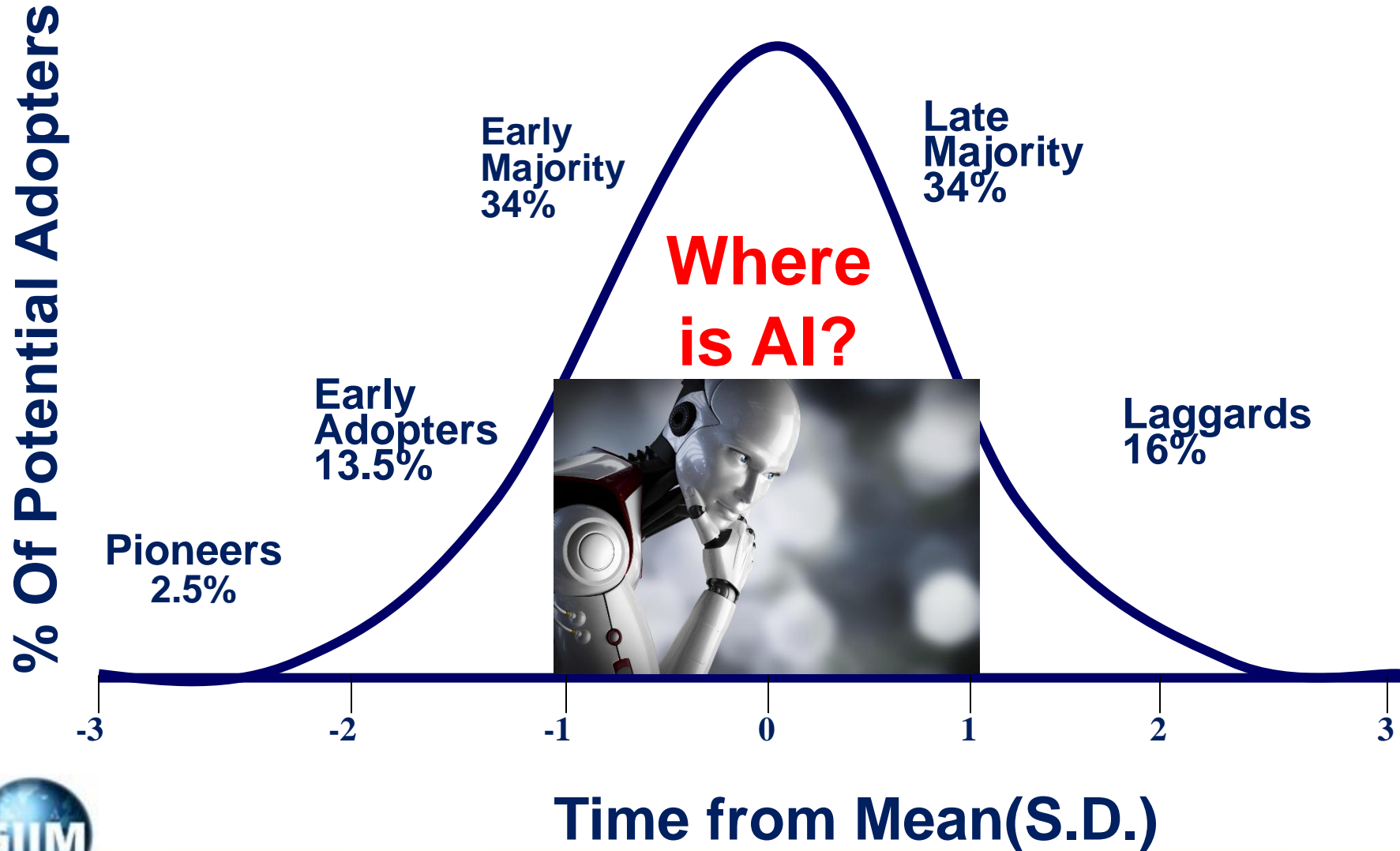
Fortune 500 CEO's

USED A.I. TO IMPROVE EFFICIENCY/ REDUCE COST — **60%**

USED A.I. TO CREATE NEW PRODUCTS/ SERVICES — **22%**

"What matters is the pace of innovation. That is the fundamental determinant of competitiveness."

—Elon Musk

AI is hot...But, is it the robots fault?

Will IT be next?

GPTs (Generative Pre-trained Transformer) are creating code better than the average programmer
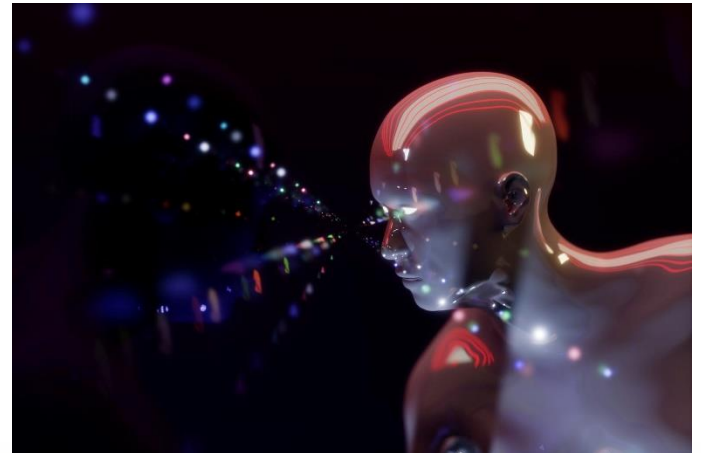
Common Business Oriented Language

Designed in 1959 by as part of a US Department of Defense

70% of global banking still dependent on COBOL transactions processed on mainframe systems

Generative AI being used to address the COBOL transition

Not enough

A — **AI**

B — **Block chain**

C — **Cloud**

D — **Data**

Not enough

Just Non-Revenue Generating Initiatives
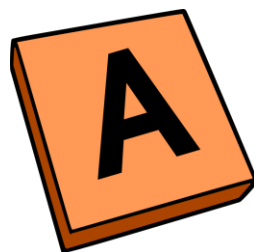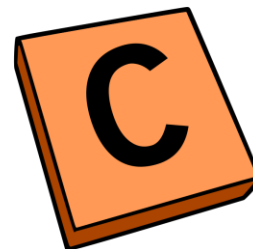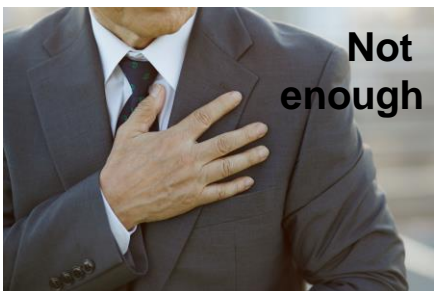
Old business logic, or narrowly defined functions

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ALIGNMENT
- HR Skills
- Communications
- Partnership
- Value Metrics
- Governance
- Technology Scope

TECHNOLOGY
- Security
- ABCD
- Robotics
- 3D Print
- Legacy

ECO SYSTEM
- Revenue / Profit
- Natural Disasters & Disease/Virus
- Interdependent World; Supply Chain
- Wars Security Terrorism
- Sourcing Models
- Regulation, Politics
- Economy

Geopolitical impact

All these things together

TURBULENCE!!!

Information Technology

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The new normal

ALIGNMENT
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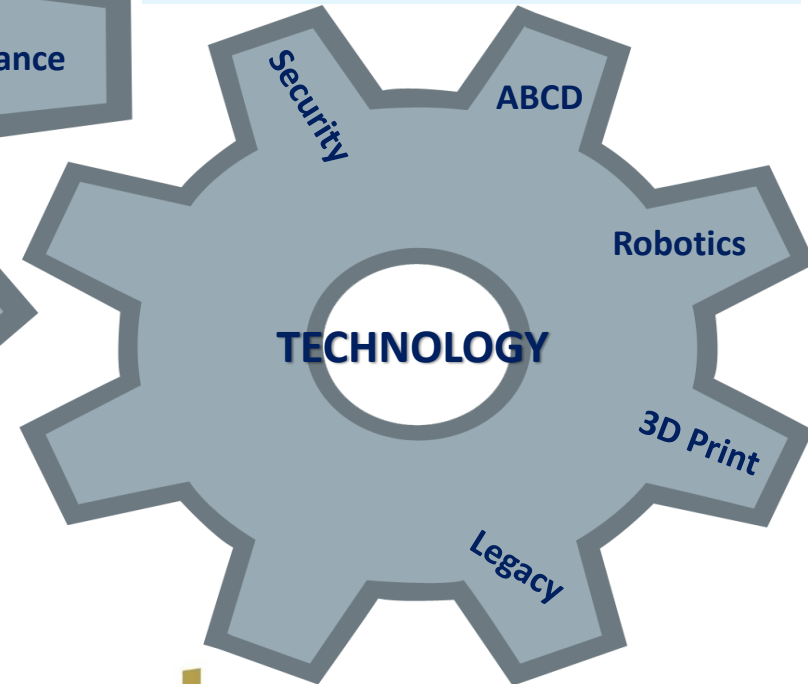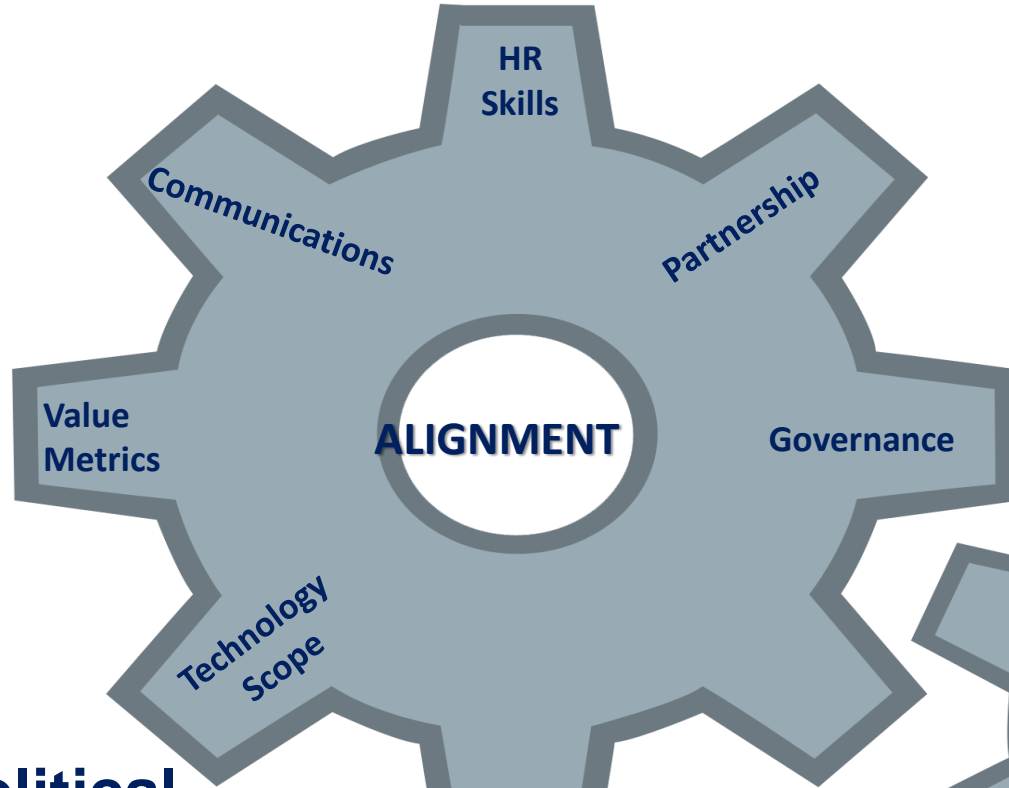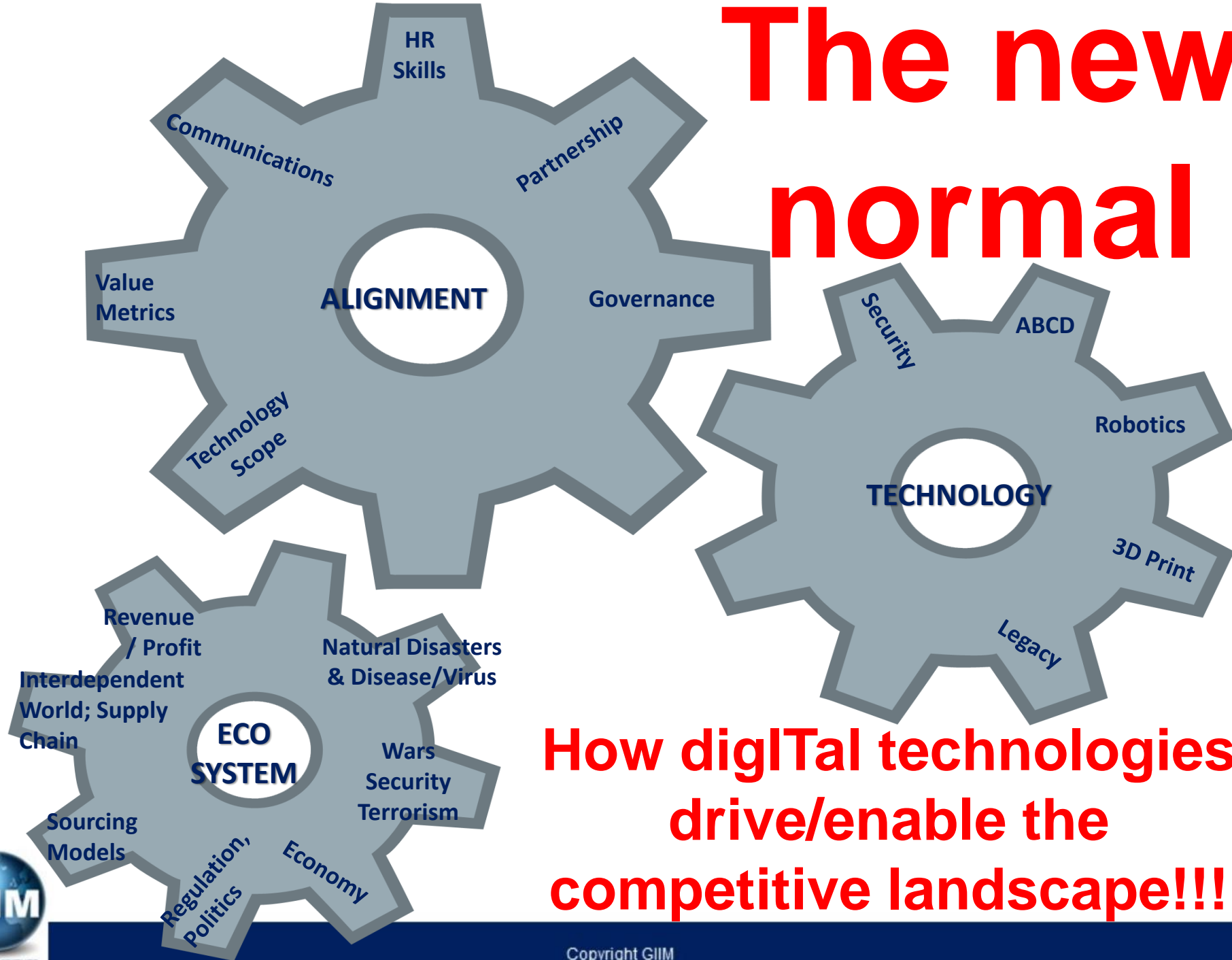
How digITal technologies drive/enable the competitive landscape!!!

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DIG**IT**AL TRANSFORMATION

Where:

- **every company is becoming an IT company**

- **the objective is having IT goals and business goals that are indistinguishable from one another**

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6 GLOBAL IT HEADLINES

1. **Intensifying Business Attention To Digitization:**
   - **Business Change, Transformation, Strategy, Collaborating, & Innovation**
   - **Cloud, Security, Data, & AI, & Customer Experience**

2. **Top 4 management concerns: unchanged over the last 6 years;**
   IT-Bus. Alignment, Security, Data/Analytics, Digital Transformation, + now AI

3. **Top 4 IT investments: remained the same for the last 12+ years:**
   Analytics/BI/Data Mining/Big Data, Cybersecurity, Cloud Computing, Software Development/Maintenance, + now AI

4. **Budgets, Skills/Hiring, Salaries increasing**

5. **% of Budget 2015 - 2023 trend**
   - **> Cloud (15.5% - 18.5%)**
   - **< Employees (38% - 33.6%)**

6. **Talent challenges/shortages, and need to invest in tech to manage dispersed workforce & serve customers**

Organizations are preparing for the global forces that survey respondents see as most likely to affect their organizations in the coming decades.

Extent to which respondents' organizations are preparing for given potential global force,
% of respondents

■ Significantly   ■ Moderately   ■ Slightly   ■ Not at all   ■ Don't know

Category	Significantly	Moderately	Slightly	Not at all	Don't know
Technological Innovation	49	34	15	2	
Energy and natural resource considerations	36	30	21	12	1
Financial changes as a result of debt, currency fluctuation, and new growth	30	43	17	7	3
Demographic changes (eg, aging population)	22	38	23	15	2
Changes in world order (eg, multipolarity, regionalization)	18	34	24	19	5

McKinsey

HOW LIKELY IS IT THAT THE FOLLOWING FACTORS WILL DISRUPT YOUR BUSINESS IN THE NEXT 12 MONTHS (1-5)
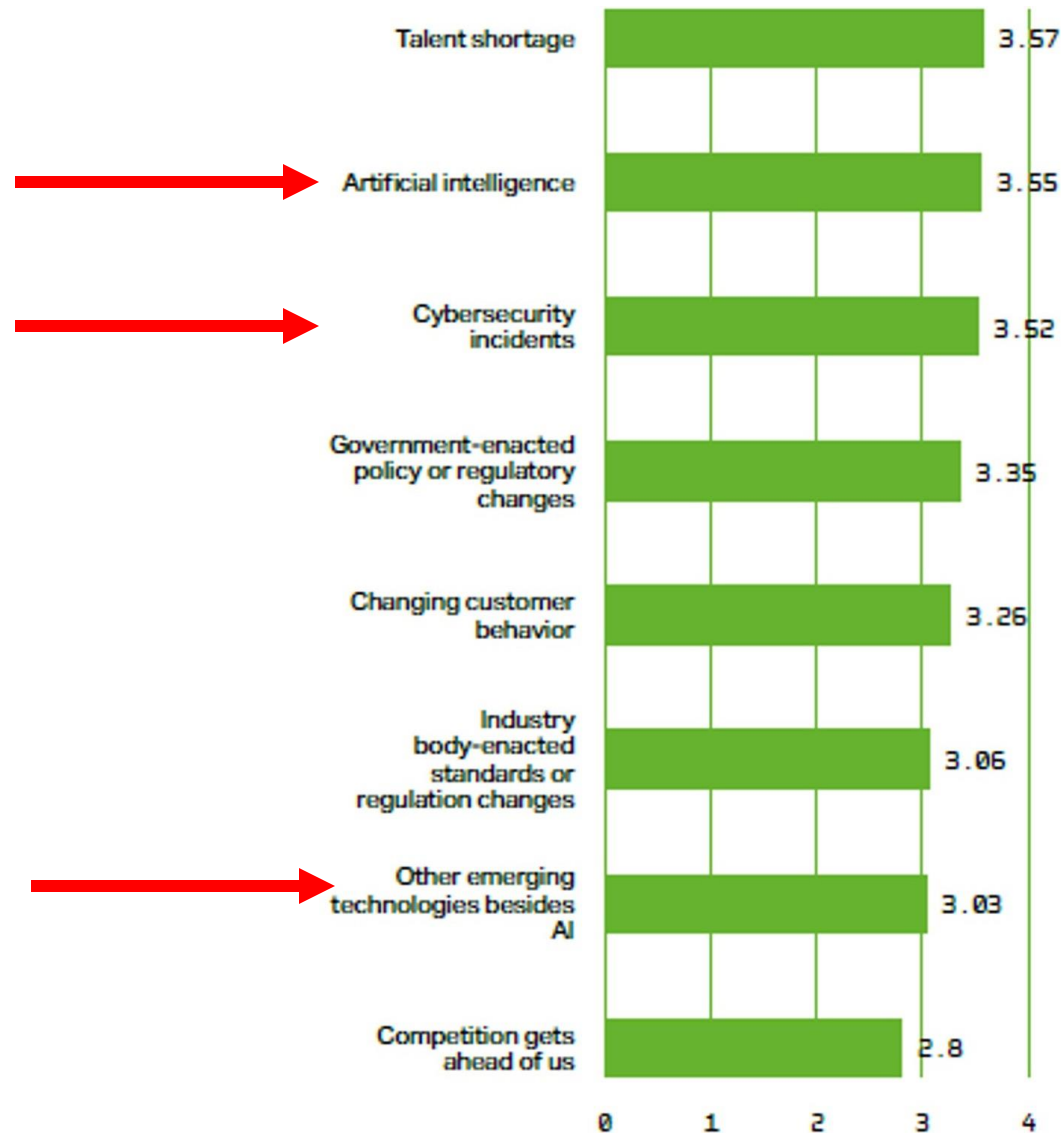
BIGGEST HEADLINE

IT IS RESHAPING GLOBAL MARKETS

WHILE RESHAPING ITSELF

AS IT BECOMES THE BUSINESS

IN THE MIDST OF A DIGITAL TRANSFORMATION!

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THE TOP RISKS THROUGH 2031

1. Adoption of digital technologies requires new skills & significant efforts to upskill/reskill existing employees

2. Succession challenges & ability to attract and retain top talent

3. Rapid speed of disruptive innovation outpaces our ability to compete

4. Substitute products or services arise that affect our business model

5. Economic conditions, including inflationary/deflationary pressures, constrain growth

If you are not prepared to lead your company through constant change, you are not going to succeed

Technology Deficit in the Boardroom; Top 5 challenges:

1. Overreliance on management for decision-making.

2. Discrpencies in understanding tech impact on the industry.

3. Unclear governance structure around technology concerns.

4. Management role on tech matters is not well-defined.

5. The links between technology and strategy are unclear.

Less than half of respondents say their boards provide enough tech stewardship

Is your board's oversight of technology matters sufficient in both scope and depth?

Yes   No   Not sure

Board

| 45% | 27% | 28% |

CxO

| 41% | 41% | 19% |

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Ref: Deloitte

With only 35% of IT and non-IT executives believing that their organizations currently have the required digital leadership skills, the opportunities for digital management education are growing exponentially.

State of IT Sourcing & Talent Management

Pervasive & persistent complaints from <u>IT leaders</u>:

➤ **their people do not have the right competencies**

➤ **they have job openings but cannot find people with the**

    right skills

Organizations Closing the Digital Skills Gap

Upskilling/reskilling on digital skills is a top priority for our company — **44%**

Leadership actively promotes digital skills learning and development for our employees — **40%**

We actively recruit and hire new talent with strong digital skills — **39%**

We have a formal program for digitally reskilling employees (e.g., training, mentoring) — **38%**

Ref: Capgemini, MIT

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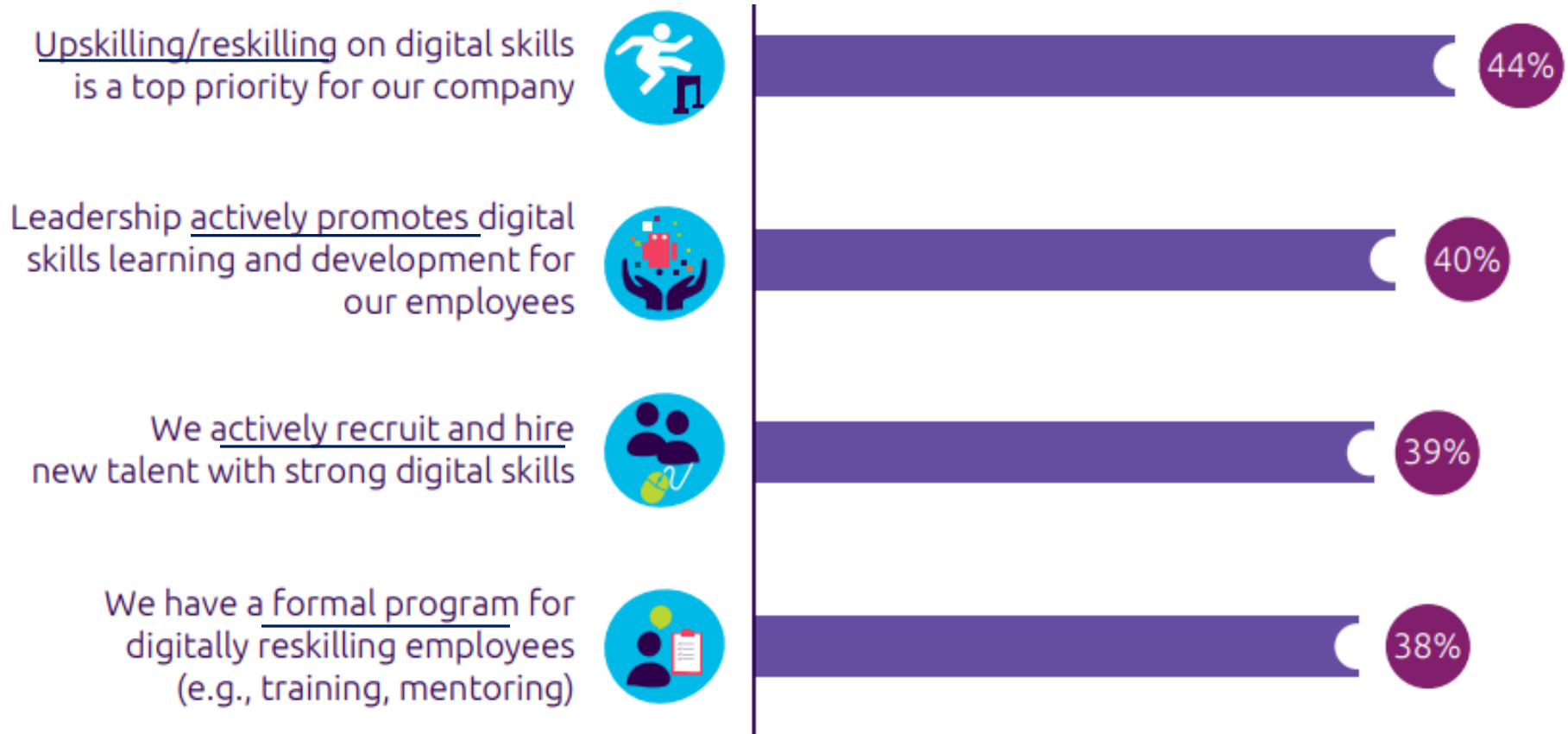
OPEN ENDED QUESTIONS

➢ Name the biggest challenge they face, the CEOs mentioned "talent" more than anything else.

➢ Cybersecurity was also top of mind, with 86% saying it is "highly" or "moderately" relevant to their agenda.

➢ Cryptocurrency ranked at the bottom, with only 16% ranking it "highly" or "moderately" relevant.

THE TOP THREATS FOR 2023

1. Recession   26%

2. Cybersecurity   22%

3. Inflation   16%

4. Talent shortage   16%

5. Geopolitics   13%

6. Climate Change   6%

7. Supply Chain   3%

8. Rapid Tech Advancement   2%

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Fortune

CIO role elevation and visibility due to the economy

77% of heads of IT say that the **CIO role was elevated due to the current state of the economy** and this visibility within the organization is expected to continue
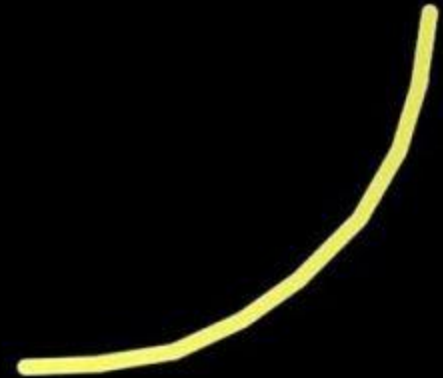
68% of their LOB counterparts agree

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DAYS   YEARS   DECADES

TOP 11 IT MANAGEMENT CONCERNS/ISSUES TO YOUR ORGANIZATION OVER THE PAST 11 YEARS

	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Security/Privacy	1	2	1	1	1	1	1	1	2	2	6
Alignment of IT & Business	2	1	2	2	2	2	2	2	1	1	1
AI/Expert Systems/Machine Learning	3	6	22	23	16	13	16				
Data/Analytics Management	4	3	3	3	3	3	3	6			
Compliance/Regulation	5	5	4	5	5	5	6	3	12	11	12
Cost Reduction-IT	6	7	17	10	6	8	9	5	7	8	17
Agility/Flexibility Business	7	16	12	9	10	7	8	9	5	9	3
Cost Reduction-Business	8	9	14	13	8	10	10	6	6	10	9
Digital Transformation	9	4	5	4	4	4	7	10			
Business Continuity	10	8	7	7	7	16	12	18	11	15	22
IT Talent/Skill Shortage/Retain	11	11	6	16	18	17	17	17	15	14	

Top 10 IT Investments Over the Last 11 Years

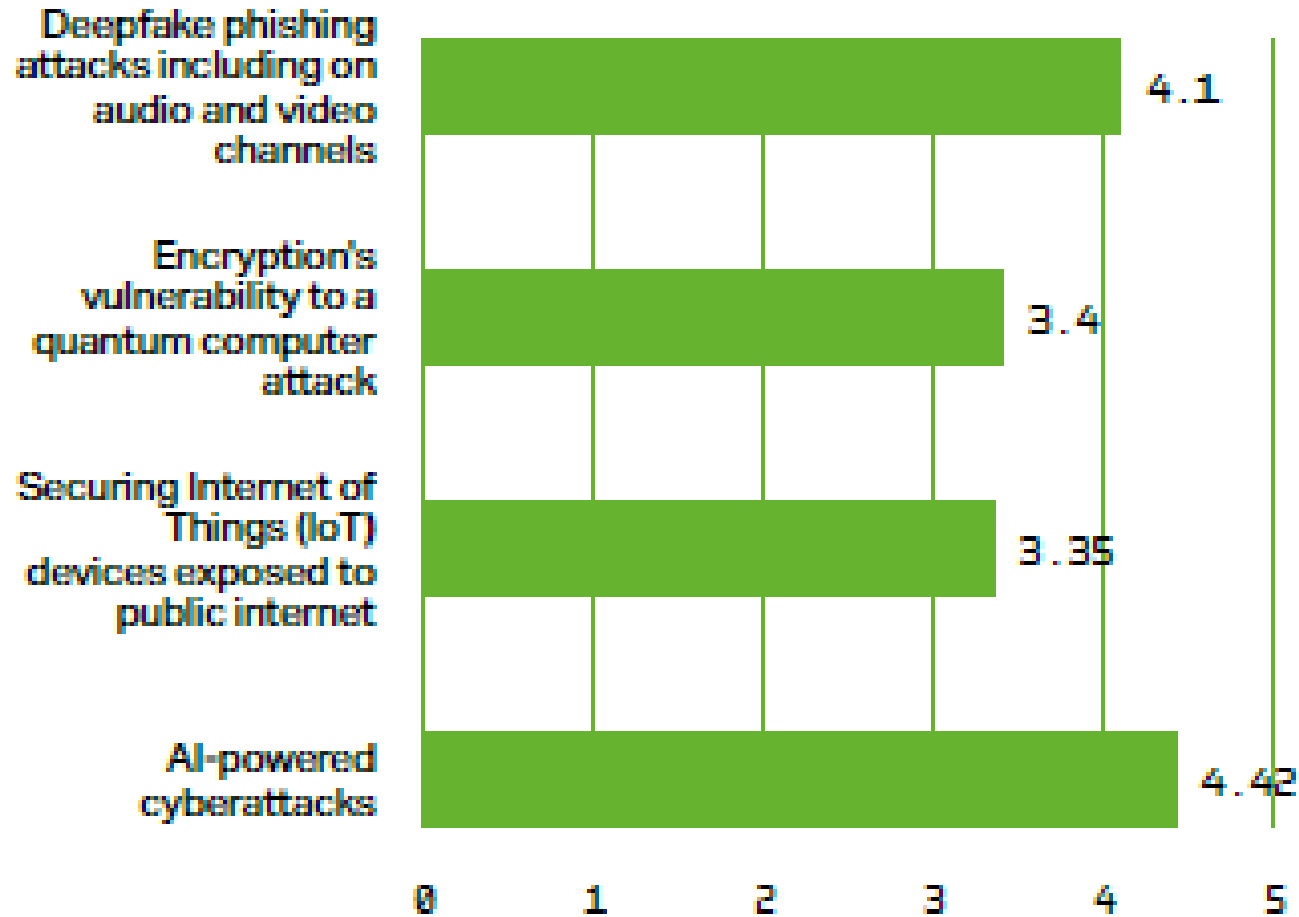|	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Analytics/BI/Data Mining/Big Data	1	1	1	3	2	1	1	2	1	1	1
Security/Cybersecurity	2	2	2	2	3	3	2	1	3	7	8
Cloud Computing (SaaS, PaaS, IaaS)	3	4	3	1	1	2	3	4	4	4	4
Application/SW Development/Maint	4	3	4	4	4	4	4	3	2	3	2
AI/Expert Systems/Machine Learning	5	8	15	17	15	12					
Customer Relationship Mgt (CRM)	6	6	6	6	5	5	6	6	5	5	6
Enterprise Resource Planning (ERP)	6	5	5	5	6	6	5	5	6	2	3
Legacy Apps: Replacing/platforming	8	7	7	7	7	7	9	9	10	9	15
Data Center/Infrastructure	9	9	9	12	8	9	8	7	7	7	6
Legacy Apps: Maintenance, updating	10	12	9	12	12	9	10	10	10		

IT Investments Index
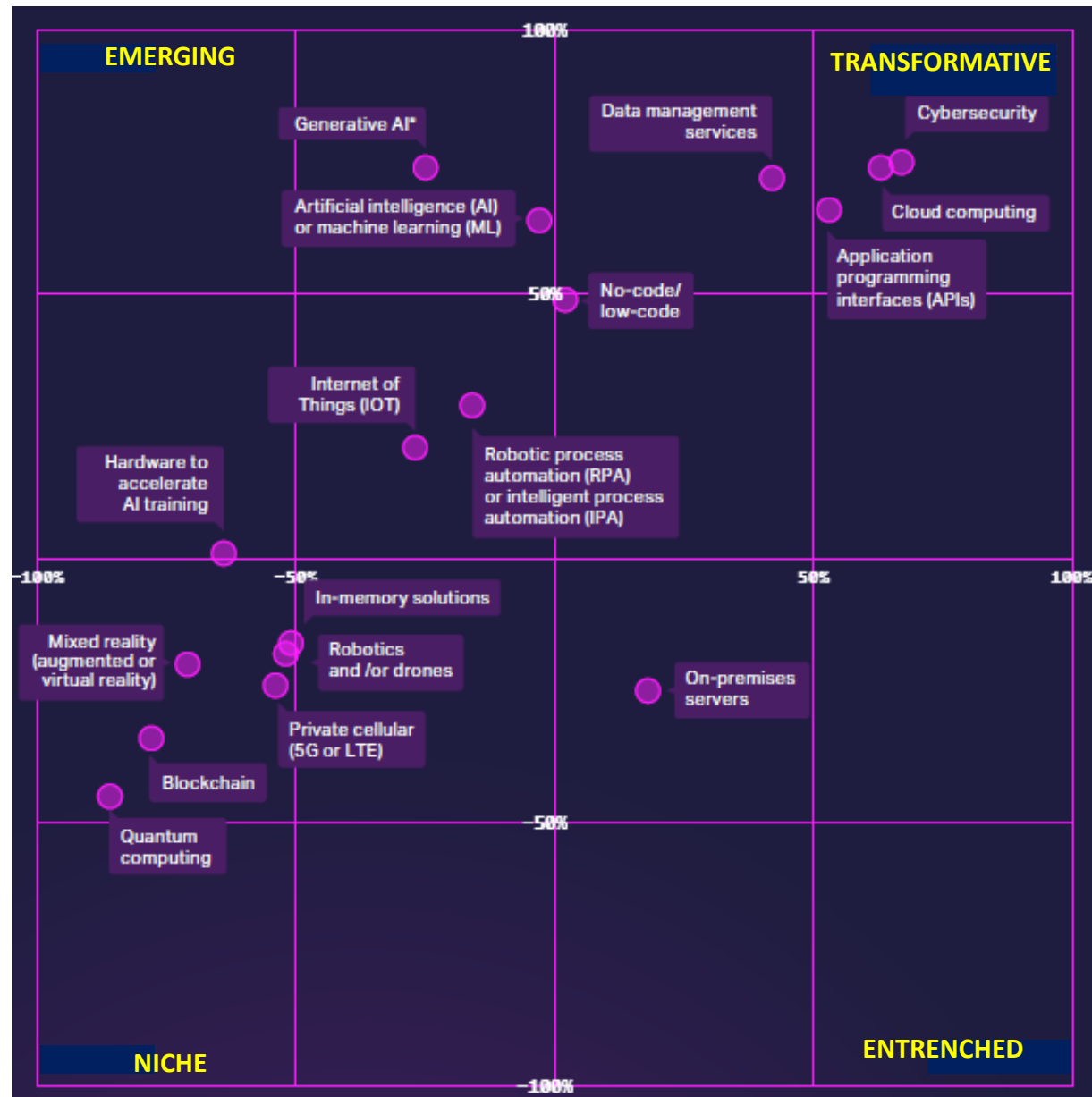
HOW LIKELY IS IT THAT THE FOLLOWING FACTORS WILL DISRUPT YOUR BUSINESS IN THE NEXT 12 MONTHS (1-5)
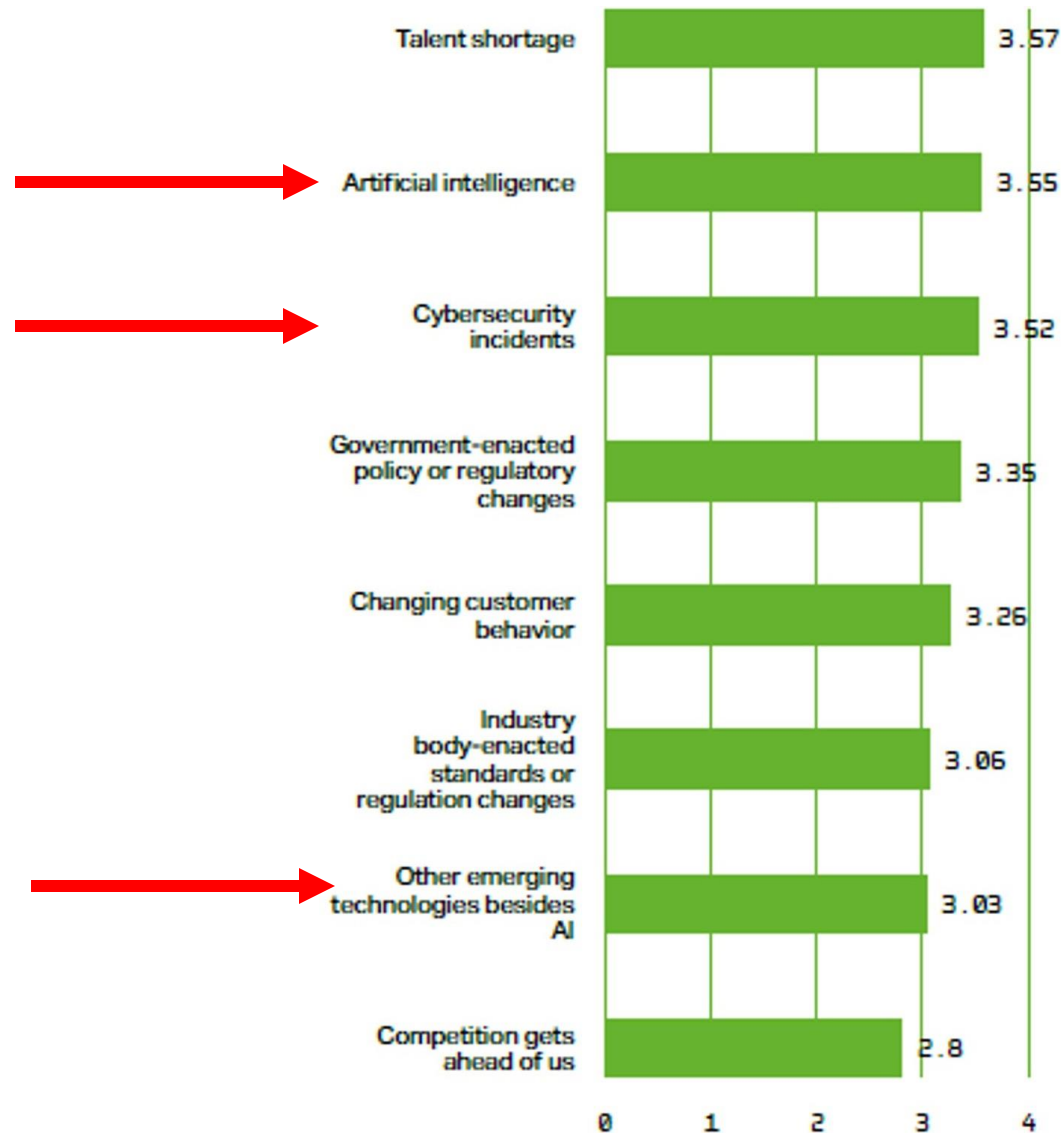
Which of the following external cyber security threats concern you the most?

What tactics does your organization apply to protect against deepfake-powered phishing?

Average (n=124)
Transformers (n=30)

Training and education for employees to identify and respond to deepfakes appropriately — 73% / 63%

Verification and authentication processes including multifactor authentication or watermarking — 59% / 53%

Money transfers and sensitive data sharing requires approval from multiple stakeholders — 49% / 36%

Use tools that detect AI-generated audio and video to identify deepfakes — 9% / 20%

Limiting the amount of available material such as high-quality audio and video for training deepfakes — 13% / 20%

None — 6% / 16.7%

TYPES OF ARTIFICAL INTELLIGENCE

DEEP LEARNING   **MACHINE LEARNING**

PREDICTIVE ANALYTICS

TRANSLATION   **NATURAL LANGUAGE PROCESSING**

CLASSIFICATION, CLUSTERING

INFORMATION EXTRACTION

SPEECH TO TEXT   **SPEECH**

TEXT TO SPEECH

INFERENCE ENGINE   **EXPERT SYSTEMS**

KNOWLEDGE BASE

REDUCTION   **PLANNING, SCHEDULING, OPTIMIZATION**

CLASSICAL

PROBABILISTIC, TEMPORAL

REACTIVE MACHINES   **ROBOTICS**

LIMITED MEMORY

THEORY OF MIND, SELF-AWARE

IMAGE RECOGNITION   **VISION**

MACHINE VISION

Success

Requires more than technology

WHICH TECHNOLOGIES DO CEOs BELIEVE WOULD CREATE THE MOST BUSINESS VALUE

| 58% PREDICTIVE A.I. (ANALYZING DATA) | 12% GENERATIVE A.I. (CREATING CONTENT) | 12% ROBOTIC PROCESS AUTOMATION | 8% 5G AND 6G WIRELESS | 5% INTERNET OF THINGS | 3% VIRTUAL REALITY/ AUGMENTED REALITY |

Forecasting events/incidents

Creates new content; e.g., text (OpenAIs ChatGPT; Chat Generative Pre-trained Transformer), music, image, audio, video, code…

Protiviti and NC State University

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WHICH TECHNOLOGIES DO CEOs BELIEVE WOULD CREATE THE MOST BUSINESS VALUE

58% PREDICTIVE A.I. (ANALYZING DATA)	12% GENERATIVE A.I. (CREATING CONTENT)	12% ROBOTIC PROCESS AUTOMATION	8% 5G AND 6G WIRELESS	5% INTERNET OF THINGS	3% VIRTUAL REALITY/ AUGMENTED REALITY

MOST COMPANIES HAVE STARTED USING GENERATIVE AI

59% COMPANIES USING OR EXPERIMENTING WITH GENERATIVE A.I. AS PART OF BUSINESS PROCESSES	29% PLAN TO USE IT BUT HAVE NOT YET BEGUN	12% NO PLANS TO USE IT

Forecasting events/incidents

Creates new content; e.g., text (OpenAIs ChatGPT; Chat Generative Pre-trained Transformer), music, image, audio, video, code…

CEO PERSPECTIVE

- ➢ **87% believe digital will disrupt their industry**
  - ▪ **44% believe they are ready**

- ➢ **Greatest Challenge overall:**
  - ▪ **85% Rapid pace of tech innovation**
  - ▪ **65% Cyber Security**

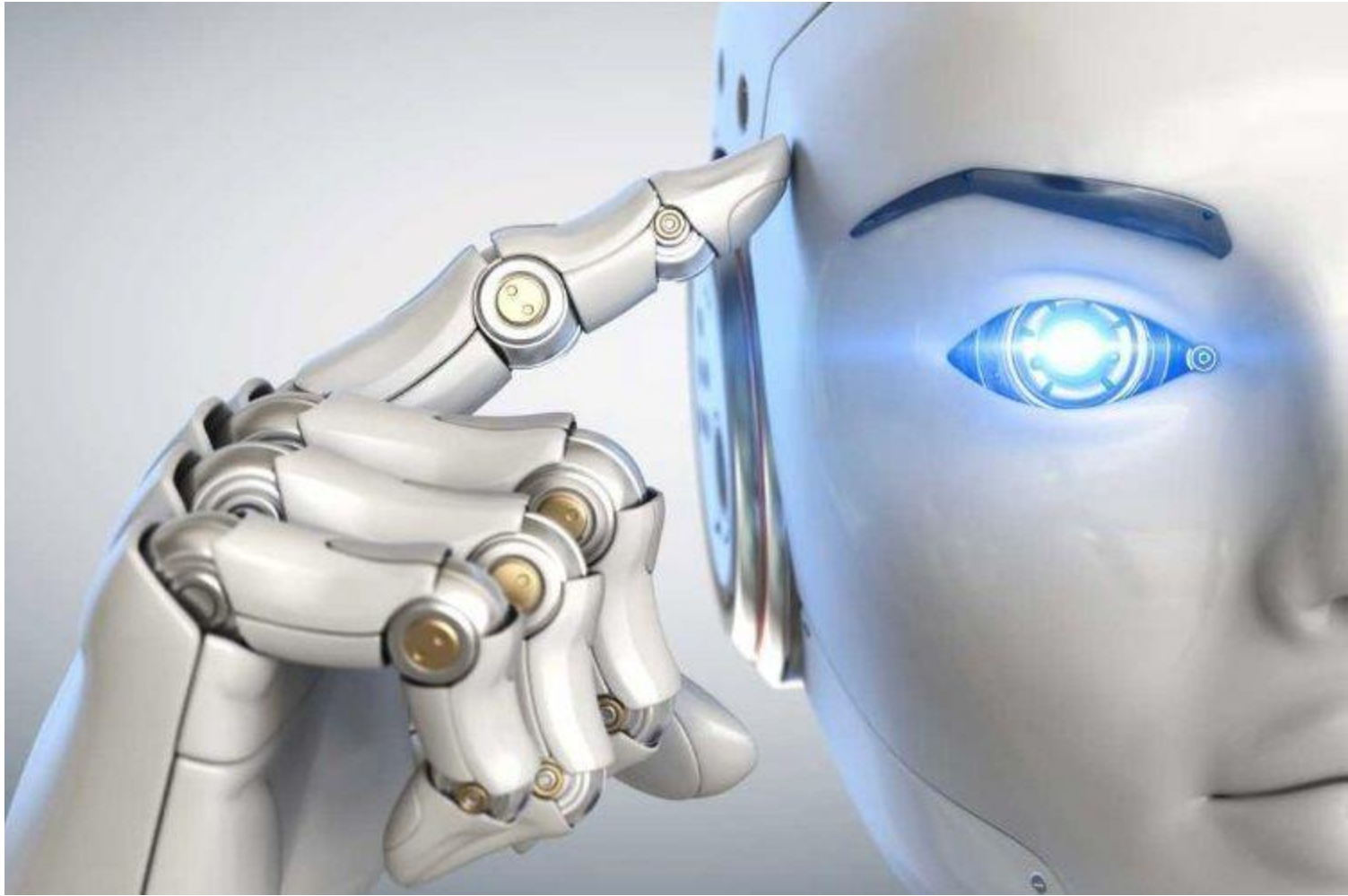- ➢ **68% agree: "True innovation isn't about being cutting edge. It's about being practical**

- ➢ **At top-quartile organizations, 57% of respondents say their senior tech leaders are very involved in strategic planning -versus 17% in the bottom quartile.**
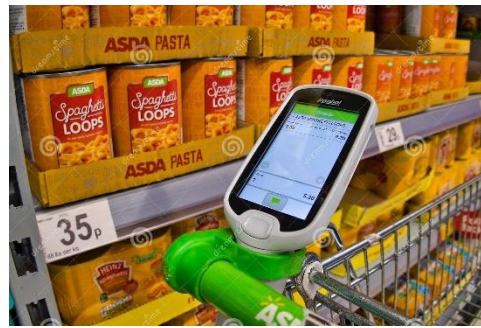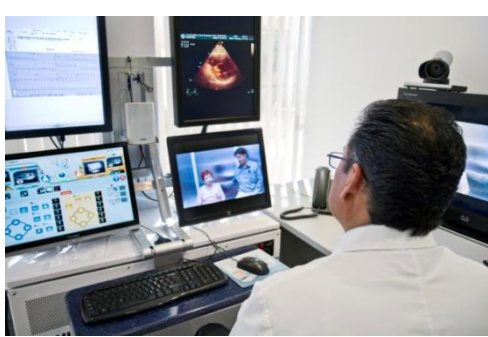
Ref: MIT/Deloitte, McKinsey, & Fortune

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INTEGRATION!!!

Examples of the Industry Impact AI

AI IN FINTECH

- Financial document search and synthesis
- Enhanced virtual assistants
- Capital markets research
- Regulatory code change consultant; Regulation & Compliance Reporting
- Personalized financial recommendations; Trading & Investment
- Customer Service
- Risk Management & Fraud Detection
- Credit Evaluation and Financing
- Automation of Back-Office Processes
- Enhanced Fraud Prevention
- Enhanced Predictive Analytics

AI IN PHARMA

- Pharmacies can become health management centers instead of only medication fulfillment

- Health trackers and wearables will be able to provide real-time capture of data

Examples of
Artificial Intelligence in Pharma:
How is it changing the pharma industry?

- Facilitating earlier detection of disease

- Driving drug discovery

- Enabling more targeted clinical trial recruitment

- Ensuring treatments can reach patients

- Analyzing the OR for efficiency and physician learning

AI IN HEALTHCARE
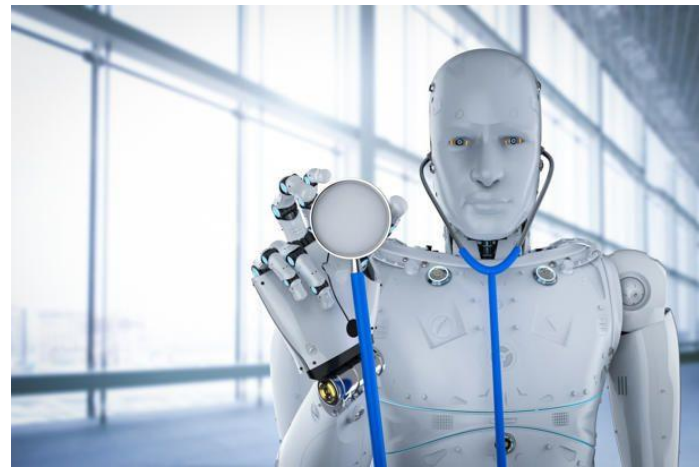
- Address Minor Ailments
- Help Patients Understand Their Test Results & Treatment
- Help Diagnose Cancer & Other Diseases Early
- Free up Doctors & Nurses to Focus on Other Things
- Spot What Doctors Miss
- Make Mental Health Services More Accessible
- Monitor Patients 24/7
- Spot An Issue You Don't Even Know You Have
- Improve All Health Treatment
- Reduce Paperwork
- Keep An Eye On Prescriptions

AI IN GOVERNMENT

- Receiving benefits for job loss, retirement, bereavement and childbirth almost immediately
- Social insurance service provision
- Classifying emergency calls based on their urgency
- Detecting and preventing the spread of diseases
- Assisting public servants in making welfare payments and immigration decisions
- Adjudicating bail hearings
- Triaging health care cases
- Monitoring social media for public feedback on policies & emergency situations
- Identifying fraudulent benefits claims
- Predicting a crime and recommending optimal police presence
- Predicting traffic congestion and car accidents
- Anticipating road maintenance requirements
- Identifying breaches of health regulations
- Providing personalized education to students & marking exam papers
- Assisting with defense and national security
- Making symptom-based health Chabot AI Vaid for diagnosis
- Public interaction with government and access government services:
  - Answering questions using virtual assistants or Chabot's
  - Directing requests to the appropriate area within government
  - Filling out forms
  - Assisting with searching documents (e.g. IP trademark search)
  - Scheduling appointments
- Virtual assistants or Chabot's being used by government:
  - virtual assistants respond to questions
  - assist to navigate services
- Other uses:
  - Translation
  - Language interpretation
  - Drafting documents

AI IN HOSPITALITY

- Reputation Management
- Revenue management, pricing, and predictive analytics
- Sales & Marketing
- AI robot concierge
- Chabot's & virtual assistants can provide personalized services, recommendations, and assistance
- Smart Room
- Guest Experience Management
- Frictionless booking processes
- Making reviews actionable

AI IN TRANSPORTATION

- Autonomous vehicles that can drive without human intervention
- Smartphone apps that provide navigation, ride-sharing, and customer service
- Traffic management solutions that optimize traffic flow and reduce congestion
- Law enforcement that uses AI to detect violations and enforce rules
- Predictive maintenance that uses AI to monitor and repair vehicles
- Intelligent freight & supply chain planning

AI IN RETAIL

- Improve customer experience by providing personalized recommendations
- Optimize pricing strategies
- Improve inventory management
- Reduce costs by automating tasks such as demand forecasting and supply chain management
- New Customer Services to Attract More Customers
- Demand Prediction & Management
- Optimize all business processes

AI IN MARKETING

- Segment Creation
- Scale lead generation and account-based marketing
- Optimize your spend, planning, and performance
- Personalized content: AI can analyze customer data and generate personalized content that is tailored to their interests and preferences
- Chabot's can provide 24/7 customer support and answer frequently asked questions, freeing up human resources for more complex tasks
- Predictive analytics: AI can analyze customer data to predict future behavior and trends, allowing marketers to make data-driven decisions
- Recommendation engines: AI can analyze customer data to recommend products or services that are likely to be of interest to them
- Voice search optimization: AI can help optimize content for voice search, which is becoming increasingly popular with the rise of smart speakers and virtual assistants

Which of the following Generative AI Chatbots do you use?
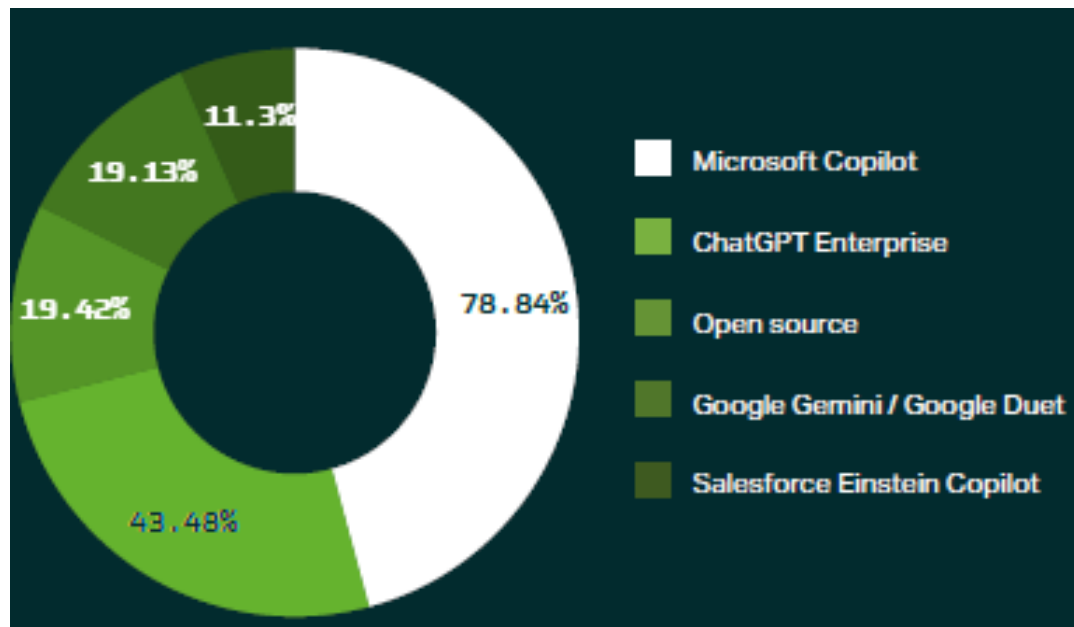
Organization Areas Using AI

Functional Area	2024
IT	1 (74%)
Marketing / Sales	2 (42.5%)
Finance / Administration	3 (29.5%)
Management	3 (29.5%)
Manufacturing / Operations / Production	3 (29.5%)
HR / Talent	6 (29.0%)
R&D	7 (24.0%)
Other	8 (17.0%)

Benefits of AI

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Improved profits	8.4%	6.3%	25.8%	40.5%	18.9%
Increased market opportunities	4.3%	4.8%	25.1%	40.1%	25.7%
Improved staff retention	5.3%	18.6%	38.8%	30.9%	6.4%
Improved staff satisfaction	2.1%	10.1%	28.2%	49.5%	10.1%
Increased competitiveness	2.1%	4.2%	20.0%	47.4%	26.3%
Greater product quality	4.7%	5.3%	22.6%	46.3%	21.1%
Increased customer loyalty	4.8%	11.8%	42.2%	31.6%	9.6%
Improved reputation	3.7%	13.9%	33.7%	38.5%	10.2%
Enhanced customer trust	6.4%	12.8%	40.4%	33.0%	7.4%
Greater social impact	7.5%	11.2%	47.1%	26.2%	8.0%
Other			18.8%	37.5%	43.8%

Organizations are 5 X more likely to make faster decisions

Success

Requires more than technology

Only 4% of companies excel at BA

WHY

JUST WHY

← SAME OLD MISTAKES

GLORIOUS NEW MISTAKES →

Ref: Bain & Co.

Only 4% of companies excel at BA
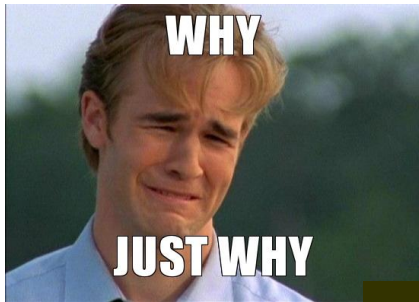
	2024
Unclear understanding of technology	1 (45.7%)
Budgetary constraints	2 (43.7%)
Inertia and/or skepticism regarding the effectiveness/maturity of AI	3 (41.7%)
Availability of skilled resources	4 (39.7%)
Constraints from existing governance	5 (28.1%}
Other	6 (11.6%)

GLOBAL IT BUDGET TRENDS

Increase Trend, But % Rate Relatively Flat

82.8%

75.8%

74.1%

77.6%

80.7%

31.2%

19.8%

11.4%

17.5%

16.0%

2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Increase   No Change   Decrease

GLOBAL INSTITUTE FOR IT MANAGEMENT
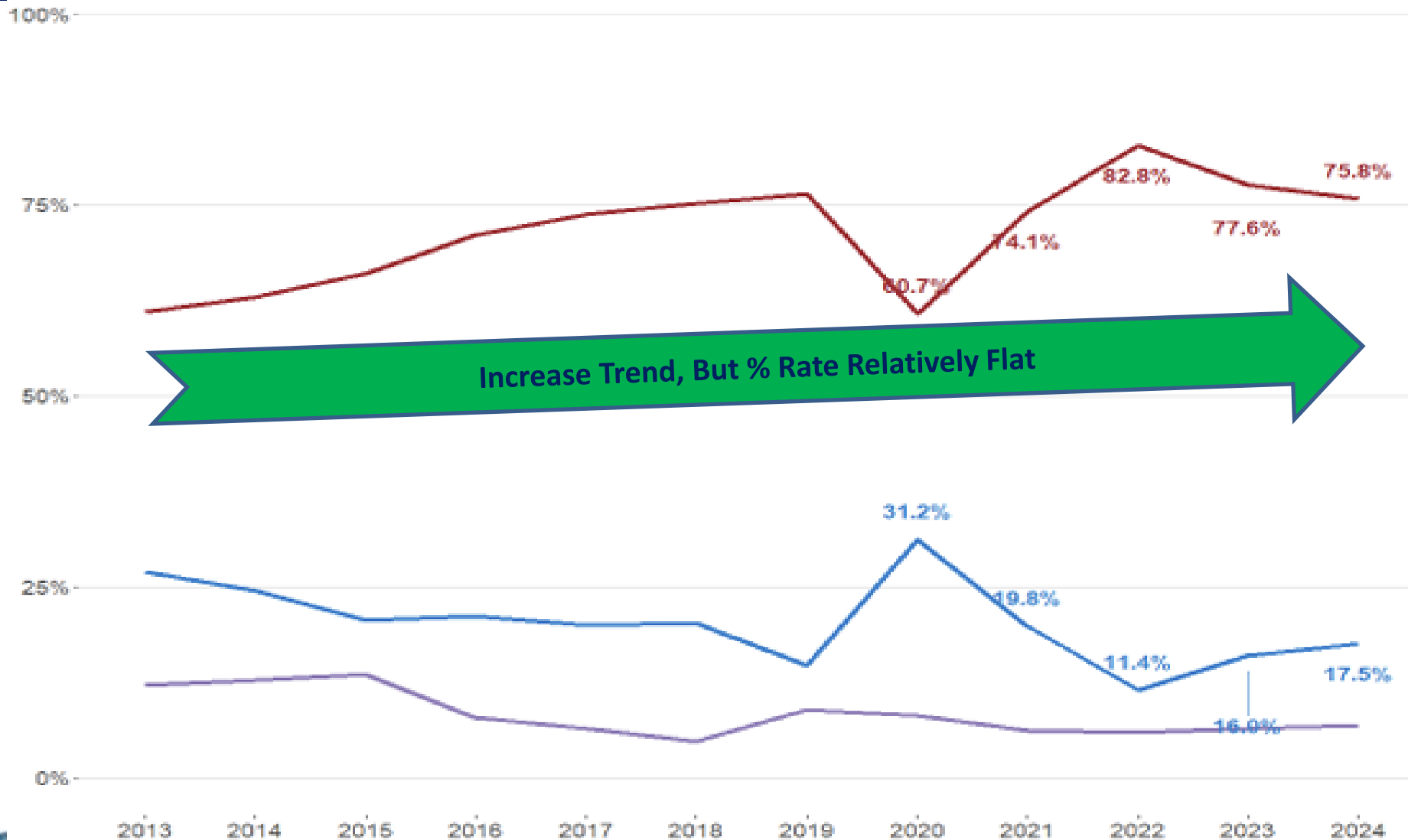
BUDGET

5-YEAR GLOBAL IT BUDGET TRENDS

	2020 %	2021 %	2022 %	2023 %	2024 %	20-24 % Change
Hardware	11.5	10.8	10.8	9.8	9.5	**2.0**
Software	17.2	15.2	17.2	15.5	17.6	**0.4**
Facilities	3.7	3.6	3.7	3.9	3.4	**.3**
Employees	33.9	35.0	33.8	33.7	33.6	**.3**
Consultants/Contractors	14.2	14.2	12.4	13.4	14.1	**.1**
Cloud	16.0	18.2	18.7	19.4	18.5	**2.5**
Other	3.8	3.0	3.4	4.3	3.3	**.5**

Things
48.4 -> 49%

People
51.9 -> 51%

Inhouse
70.1-> 67.4%

Outhouse
30.2 -> 32.6%

CHANGE IN EXTERNAL CLOUD USEAGE

90%

75.4% 77.0%

74.2% 65.8%

70.3%

Trend

60%

32.4%

30% 23.1%

21.3% 25.5% 26.8%

0% 1.6% 2.9%

1.7% 0.4% 1.8%

2016 2017 2018 2019 2020 2021 2022 2023 2024

Increase No Change Decrease

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GLOBAL INSTITUTE
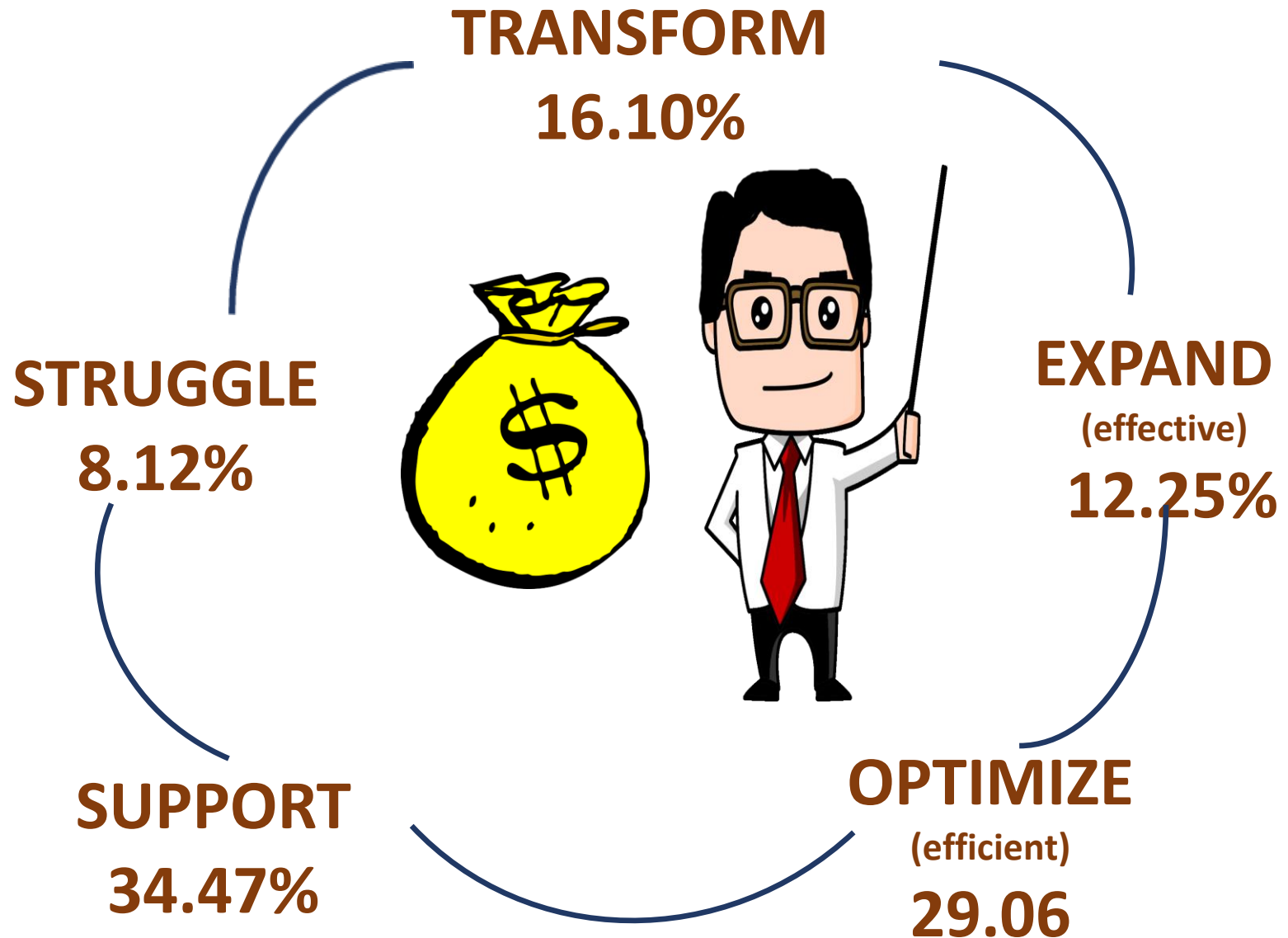FOR IT MANAGEMENT

But IT budgets are increasing?

Revenues increased + inflation

IT BUDGET AS PERCENT OF REVENUE BY INDUSTRY

Sector [a]	Number of Organizations	Average % of Revenue Spent on IT
IT Services / Consulting	26	10.5%
IT Hardware / Software	12	8.6%
Not-for-Profit	27	6.7%
Other for profit (specify):	22	5.8%
Financial Services / Insurance / Banking	53	5.5%
Education	28	5.4%
Retail / Wholesale	12	5.0%
Healthcare / Medical / Medical Technology / BioMedical	67	4.1%
Government	29	4.0%
Business or Professional Services / Consulting	14	3.9%
Real Estate	12	2.5%
Consumer Goods / Services	10	2.4%
Transportation / Distribution / Logistics	15	2.3%
Manufacturing	33	2.0%

IT STAFF CHANGES
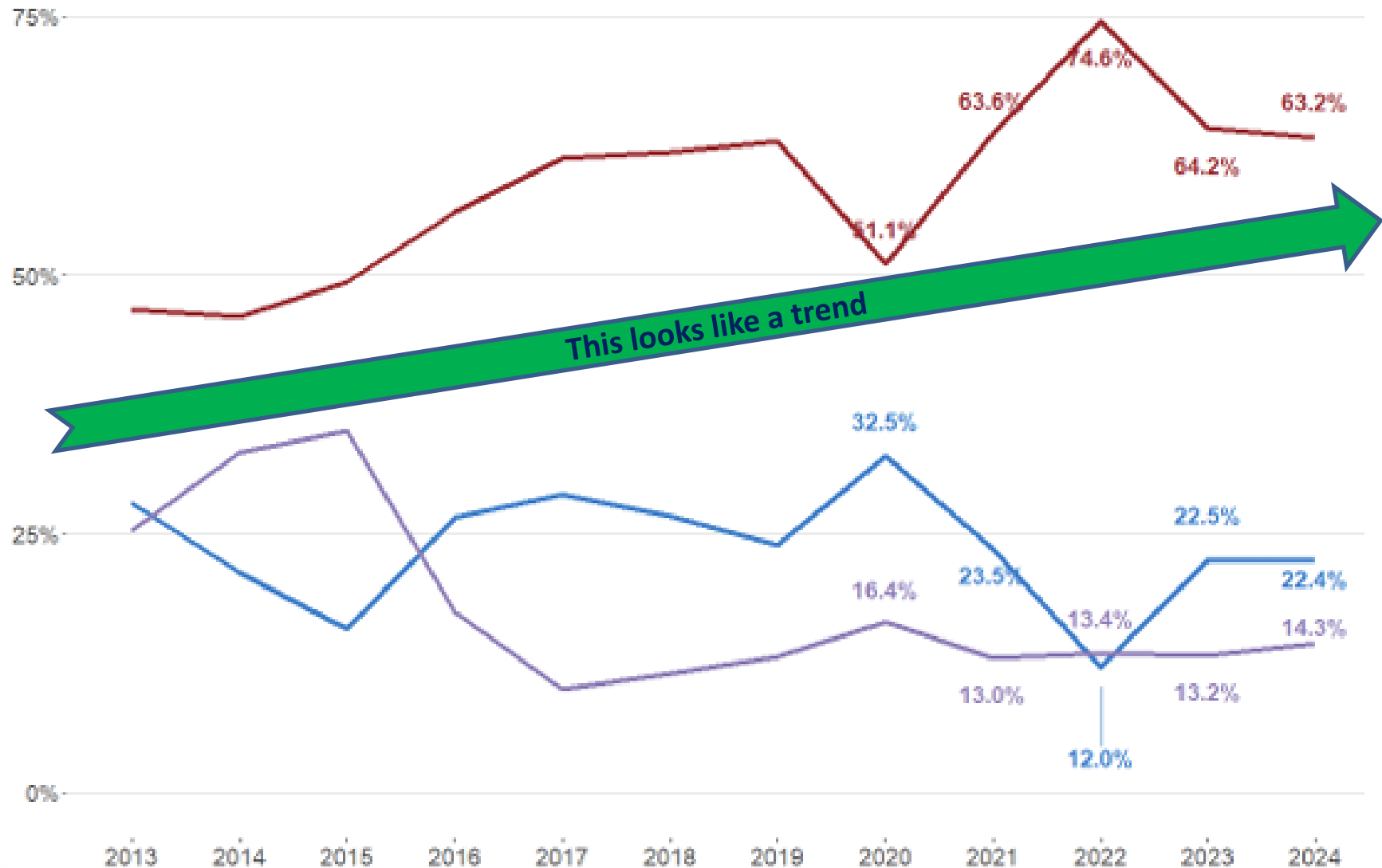
Increase   No Change   Decrease

IT STAFF TURNOVER RATE

Historical Average: 7.9%

Trend

Trend

8.9%

8.1%

8.5%

7.3%

6.4%

2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

SKILLS GAP

Required

Available
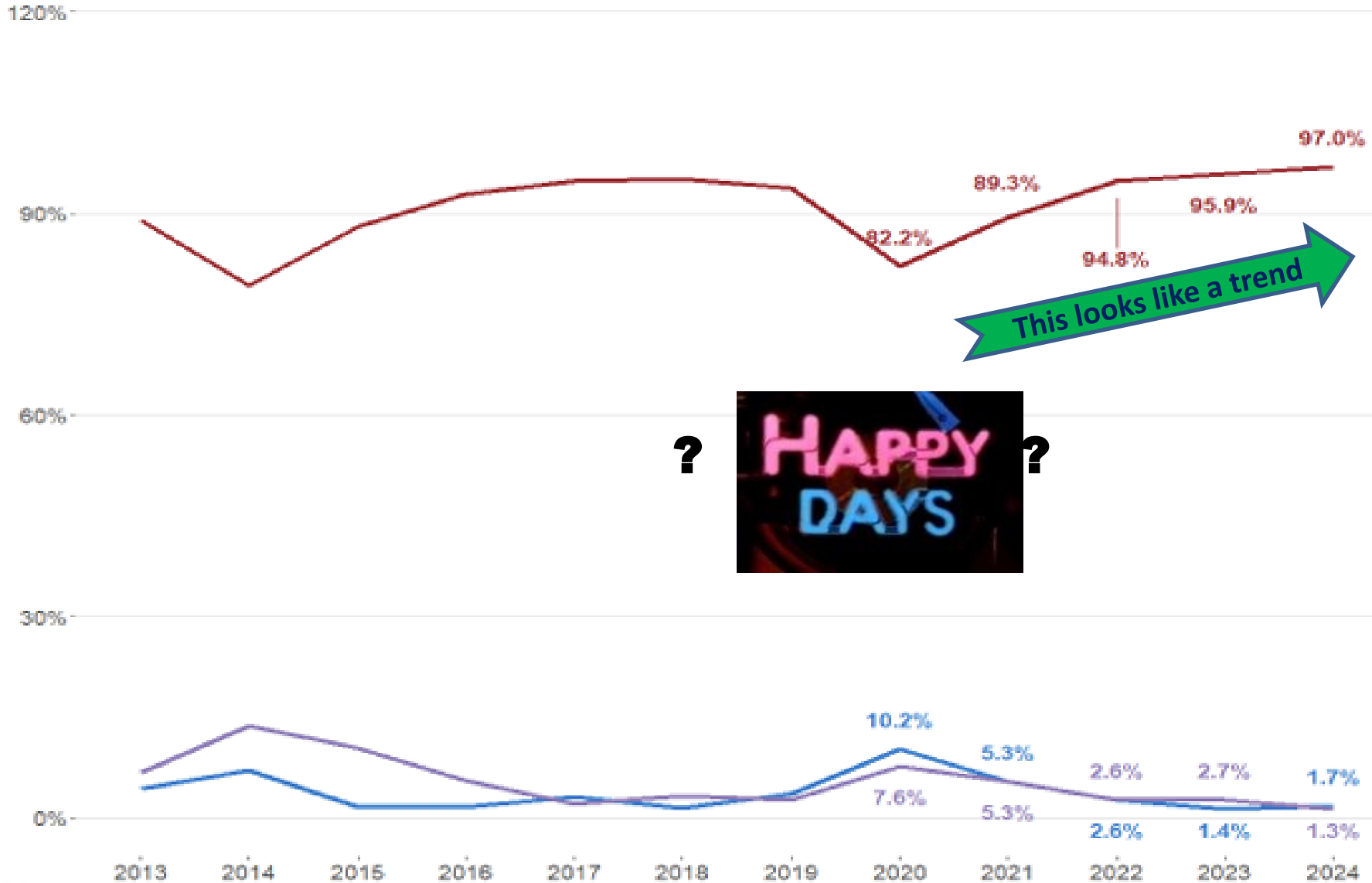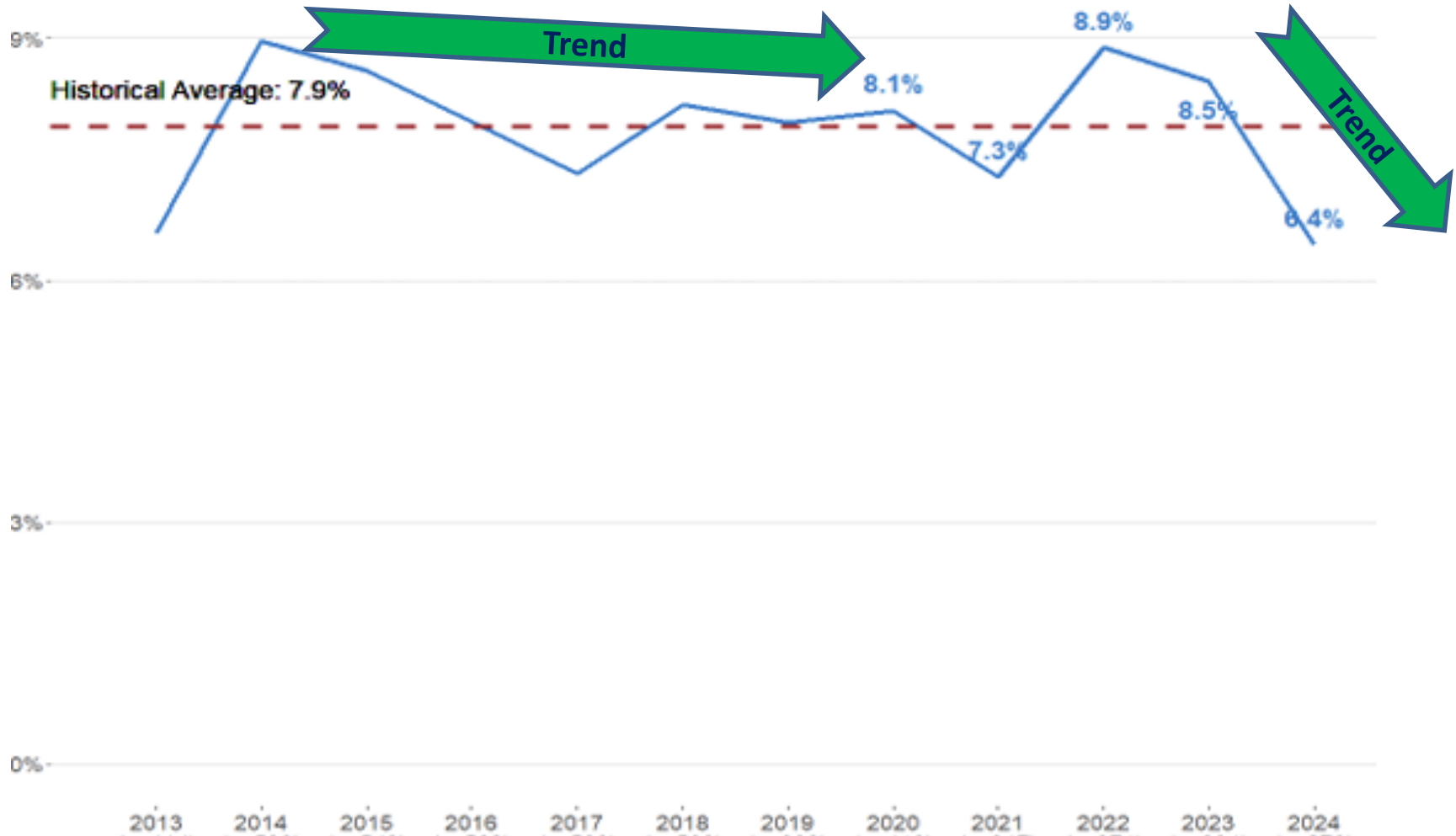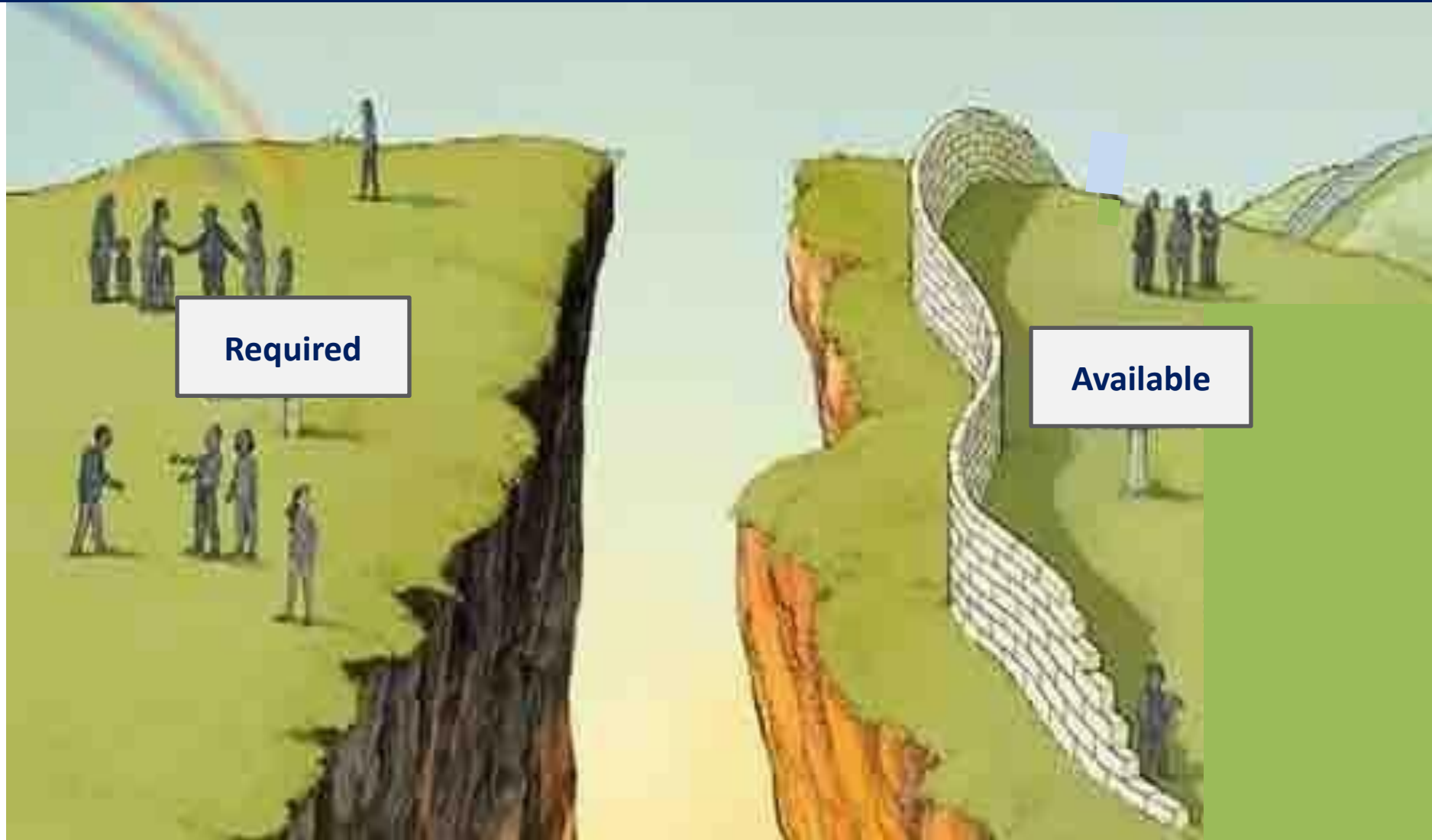
% IT BUDGET ALLOCATION
FOR EDUCATION/TRAINING

Historical Average: 5.2%

5.5%

5.1%

6.1%

6.2%

6.1%

Trend

6%

4%

2%

0%

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

"T Shaped Professionals

Ability to work outside of core area

Broad

Functional area, discipline, or specialty
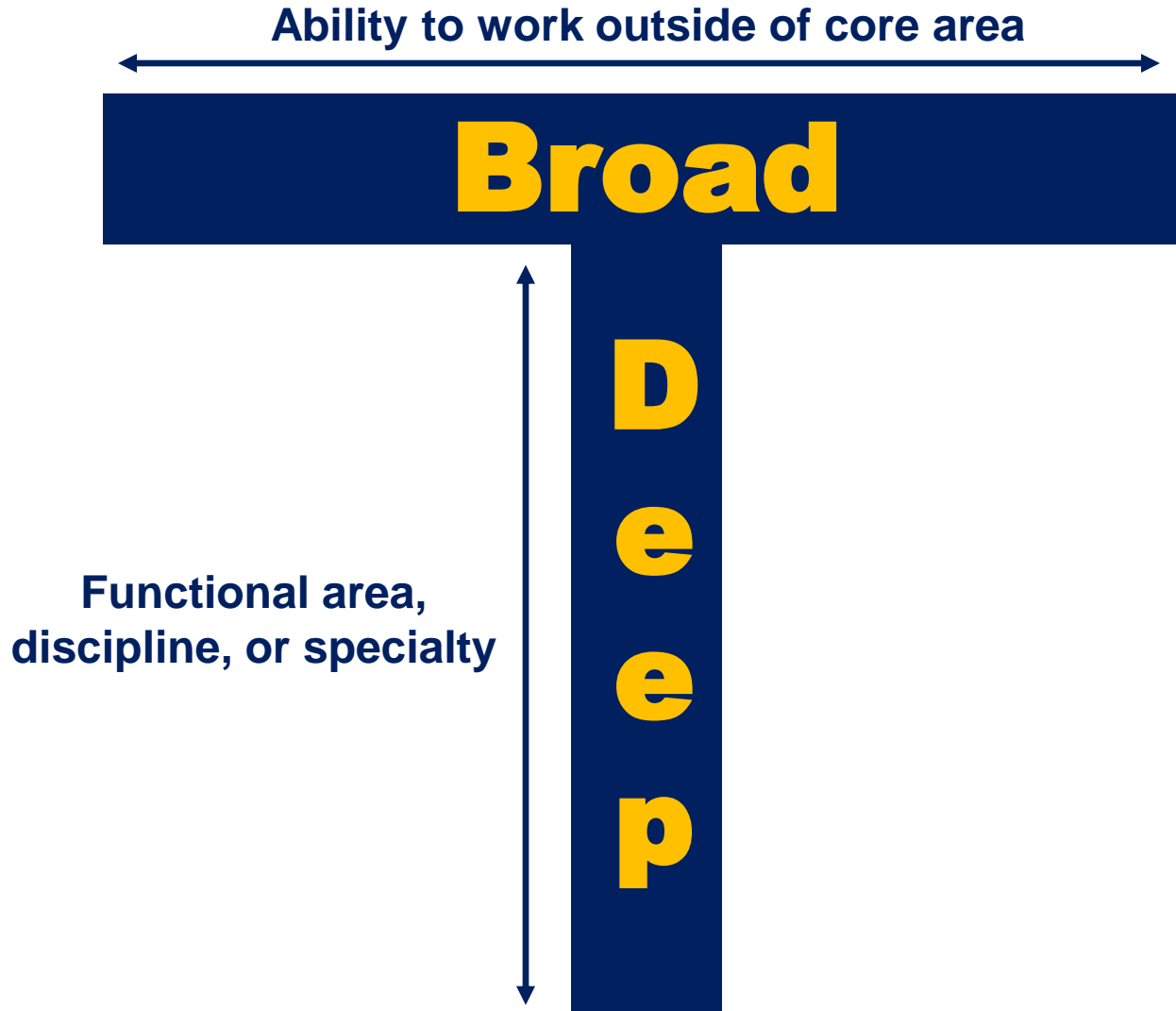
D e e p

HYBRID SKILLS FOR THE 21st CENTURY

Broad General Skills

BUSINESS/MANAGEMENT
- Leadership
- Strategic Thinking
- Project Management
- Finance
- Industry

INTERPERSONAL
- Communications
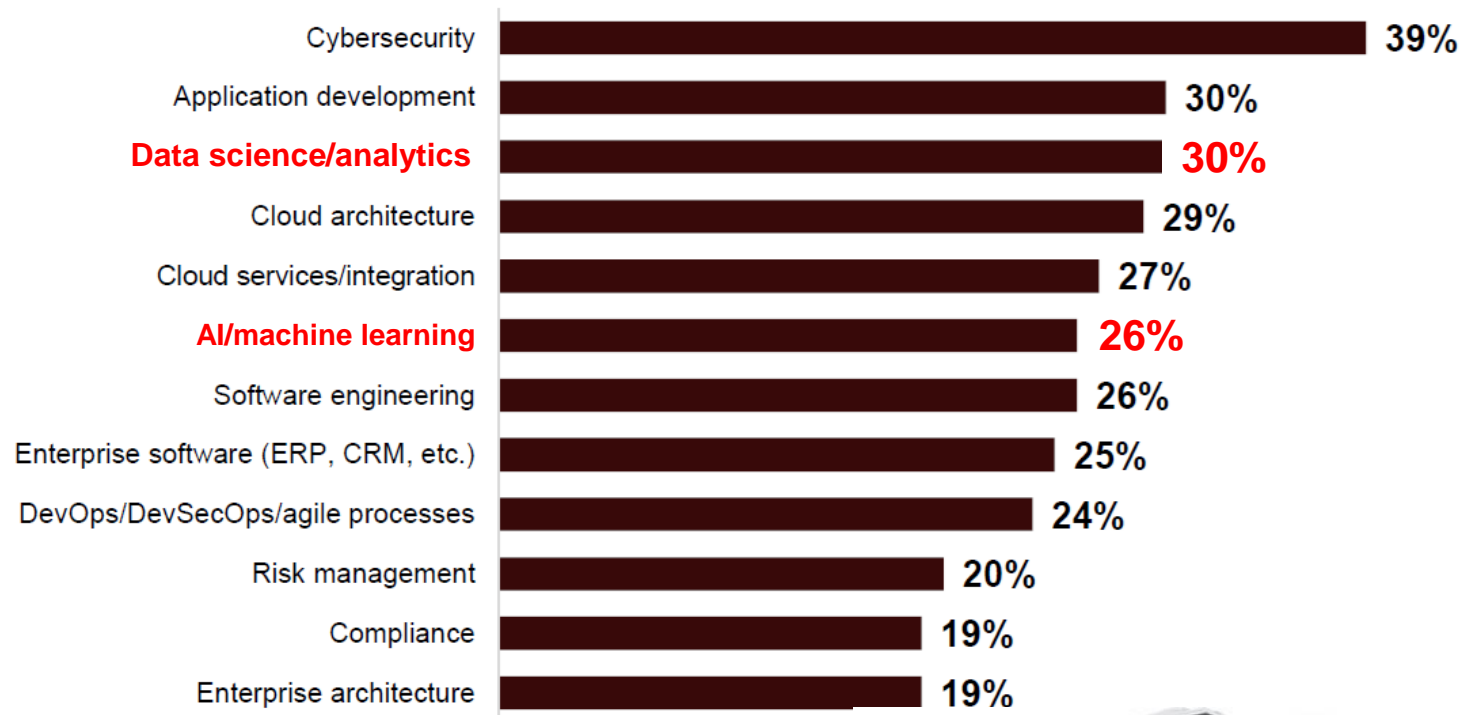- Teams/Relationships
- Adaptability
- Morals/Ethics

Deep Technical Skills
- ABCD
- Security
- Data/IoT, AI
- Programming
- SW Engineering
- IT Architecture
- -
- -

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Ref: GIIM, ACM, IBM, SIM, Gartner,
EU Commission, PWC…

MOST IMPORTANT TECHNICAL SKILLS

Technical Skill	Most Important to the Organization		Most Difficult to Find	
	2023 (n=436)	2021 (n=454)	2023 (n=436)	2021 (n=454)
Security / Cybersecurity	1 (47.7%)	1 (50.2%)	1 (45.4%)	1 (46.0%)
Analytics / Business Intelligence / Big Data / Data Scientist	2 (31.2%)	2 (31.5%)	2 (33.9%)	2 (36.8%)
Analyst -- Business	3 (27.1%)	3 (30.8%)	5 (20.2%)	6 (18.9%)
Cloud	4 (23.2%)	4 (22.7%)	5 (20.2%)	5 (20.3%)
Functional Area Knowledge	5 (22.0%)	5 (20.9%)	4 (24.1%)	4 (20.5%)
Software Development / Programming Languages (e.g., C#, .NET, Java, CMMI, TSP, PSP, SQL, etc.)	6 (19.7%)	10 (15.9%)	7 (18.3%)	10 (16.1%)
ERP (Enterprise resource planning)	7 (18.6%)	8 (16.3%)	11 (14.9%)	13 (15.2%)
Architecture - Application / Solution	8 (18.3%)	6 (19.2%)	8 (17.0%)	7 (17.0%)
AI / Expert Systems / Machine Learning	9 (18.1%)	14 (12.1%)	3 (33.5%)	3 (23.8%)
Analyst - Technical	10 (15.6%)	9 (16.1%)	9 (16.7%)	11 (15.4%)
Architecture - Data / Information	12 (14.0%)	7 (16.7%)	10 (16.1%)	8 (16.7%)

Anticipating new hires in these tech areas

Tech Area	Percentage
Cybersecurity	39%
Application development	30%
Data science/analytics	**30%**
Cloud architecture	29%
Cloud services/integration	27%
AI/machine learning	**26%**
Software engineering	26%
Enterprise software (ERP, CRM, etc.)	25%
DevOps/DevSecOps/agile processes	24%
Risk management	20%
Compliance	19%
Enterprise architecture	19%

Q: In which technology-related areas do you anticipate your organization will hire over the next 6-12 months?

Top 11 MOST IMPORTANT IT SOFT Skills

	2022	2021	2018
Critical Thinking	1	1	1
Collaboration/Teamwork	2	4	2
Business Acumen	3		3
Leadership	4	3	6
Problem Solving	5	10	6
Innovation	6	8	8
Relationship Management	7	15	8
Emotional Intelligence/Empathy	8	6	10
Attention to Detail	9		15
Time Management	10	21	10
Self Learner	11		

Off List:
- Strategic Thinking
- Business Knowledge

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DIGITAL
LEADERSHIP
Leveraging the uniqueness of Digital

GIIMs HELPING HAND
BRIDGING ESSENTIAL SKILLS

GIIM — We make digital leaders

The Global Institute for IT Management

GIIM collaborates with its affiliates in delivering full degrees, certifications, postgraduate diplomas, and customized just-in-time workshops & seminars

35 4-course digital management certificates (over 150 courses) for IT and non-IT professionals

- **Programs focus on the digital transformation of IT & business**

- **Faculty & adherence to accreditation standards authenticates our brand**

Organizations Closing the Digital Skills Gap

Upskilling/reskilling on digital skills is a top priority for our company — 44%

Leadership actively promotes digital skills learning and development for our employees — 40%

We actively recruit and hire new talent with strong digital skills — 39%

We have a formal program for digitally reskilling employees (e.g., training, mentoring) — 38%

Ref: Capgemini, MIT
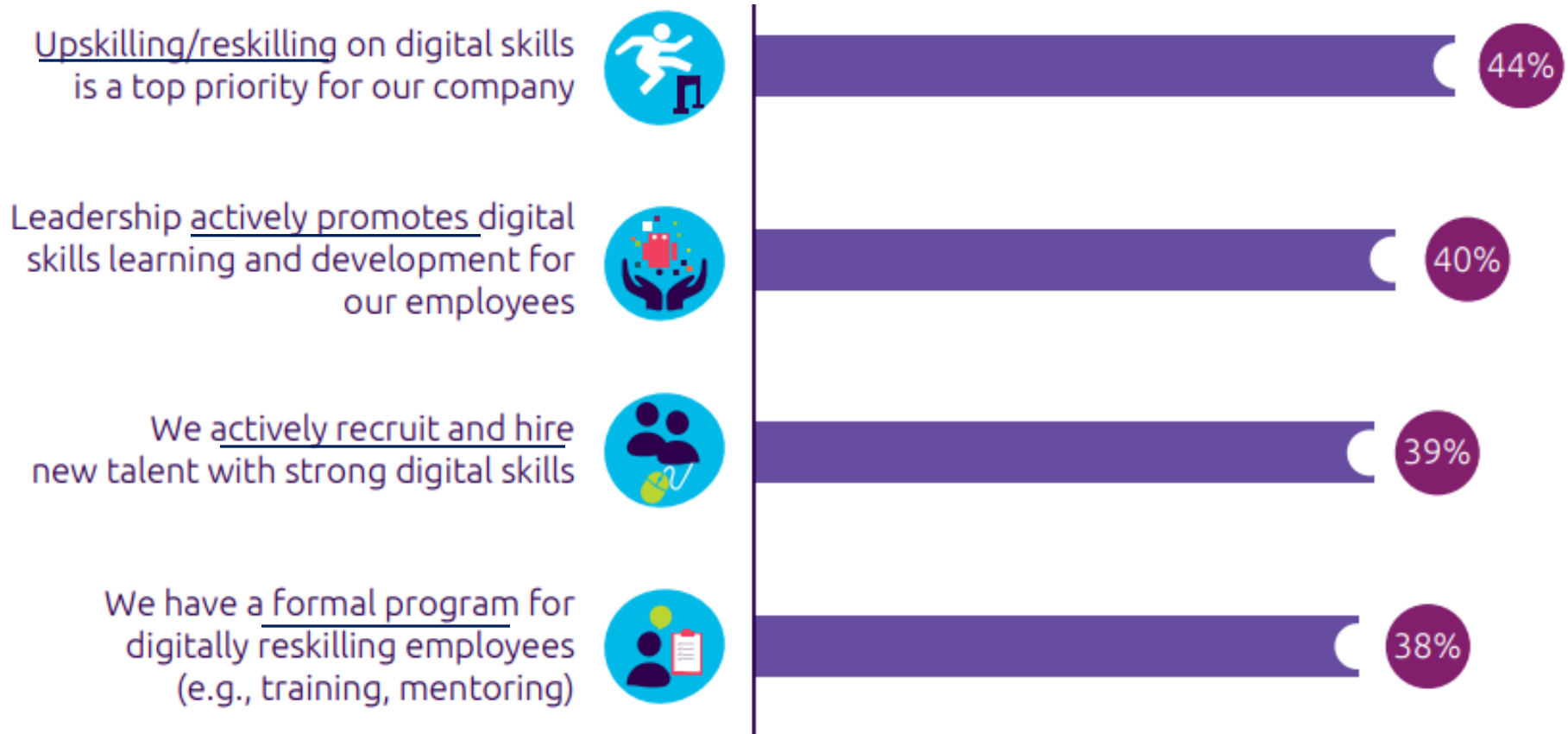
Vision, Strategies, Plans and Budgets versus

Leaders and Managers

LEADERS

DEFINES WHAT;

DOING THE RIGHT THINGS

Vision — A sensible, enthusiastic, passionate, and appealing picture of the future

Strategies — A logic & direction for how the vision can be achieved

MANAGERS

DEFINES HOW;

DOING THINGS RIGHT

Plans — Specific steps and timetables to implement the strategies

Budgets — Plans converted into financial projections and goals

The IT Managerial/Leadership Skill Mix

Management Levels

CIO

Third-Level Management (executives)

Second-Level Management (managers)

First-Level Management (supervisors)

Entry Level

Leadership Skills

Interpersonal Skills
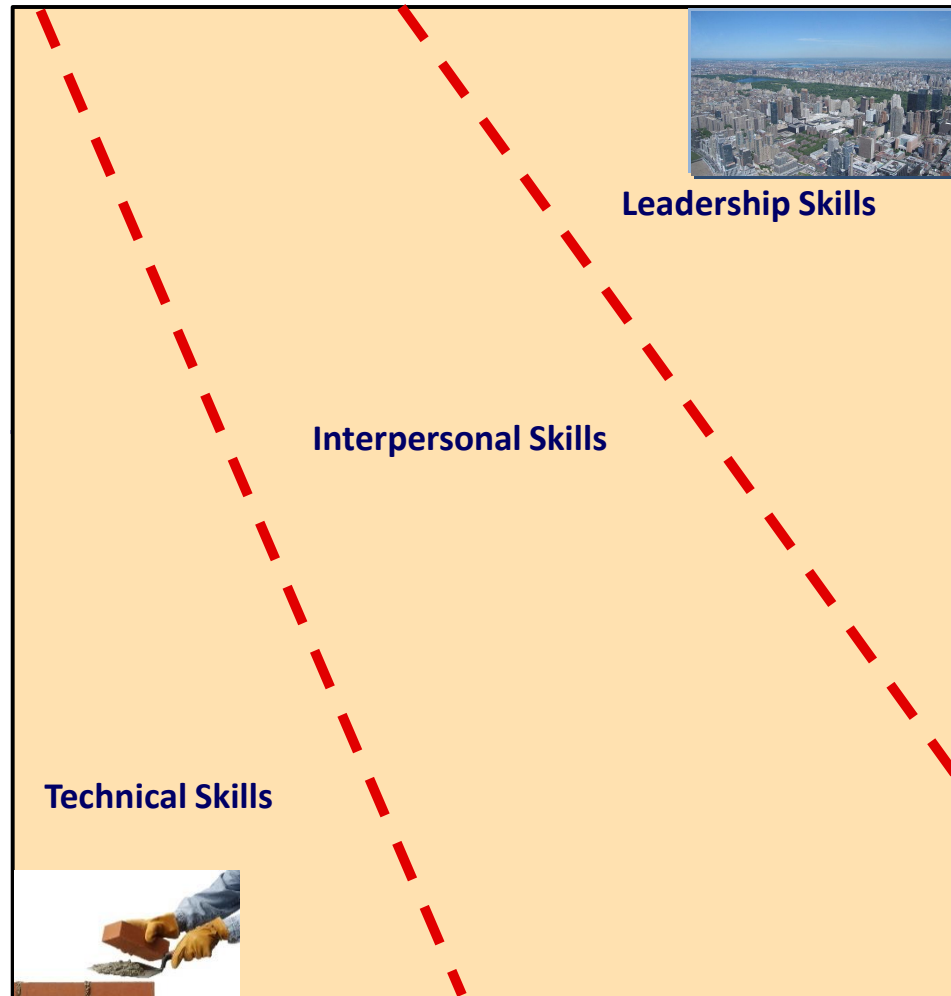
Technical Skills

Entrepreneur

Business Partner

Innovator

Value Creator

Marketer

Technical

THE MOST IMPORTANT IT MANAGEMENT SKILL FOR THE NON-IT EXECUTIVE

1. **CIO/CTO (& other IT executives) roles**

2. **Compliance/Regulations**

3. **Emerging Technologies**

4. **Governance (including value analytics)**

5. **HR, sourcing, & organization structure**

6. **Innovation**

7. **Project Management**

8. **Sponsor & champion(s) roles**

9. **Trends in leveraging IT**

10. **Vendor Management**

The most important IT management skill for the
non-IT executive

The most important IT management skill for the non-IT executive of the future to understand will be:

- CIO/CTO (& other IT executives) roles   20% → 23% → 30%
- Governance (including value analytics)   31% → 33% → 15%
- HR, sourcing, & organization structure   5% → 20% → 28%
- Sponsor & champion(s) roles   16% → 12% → 15%
- Trends in leveraging IT   28% → 10% → 12%

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WHO MAKES IT DECISIONS?

Global Institute for IT Management
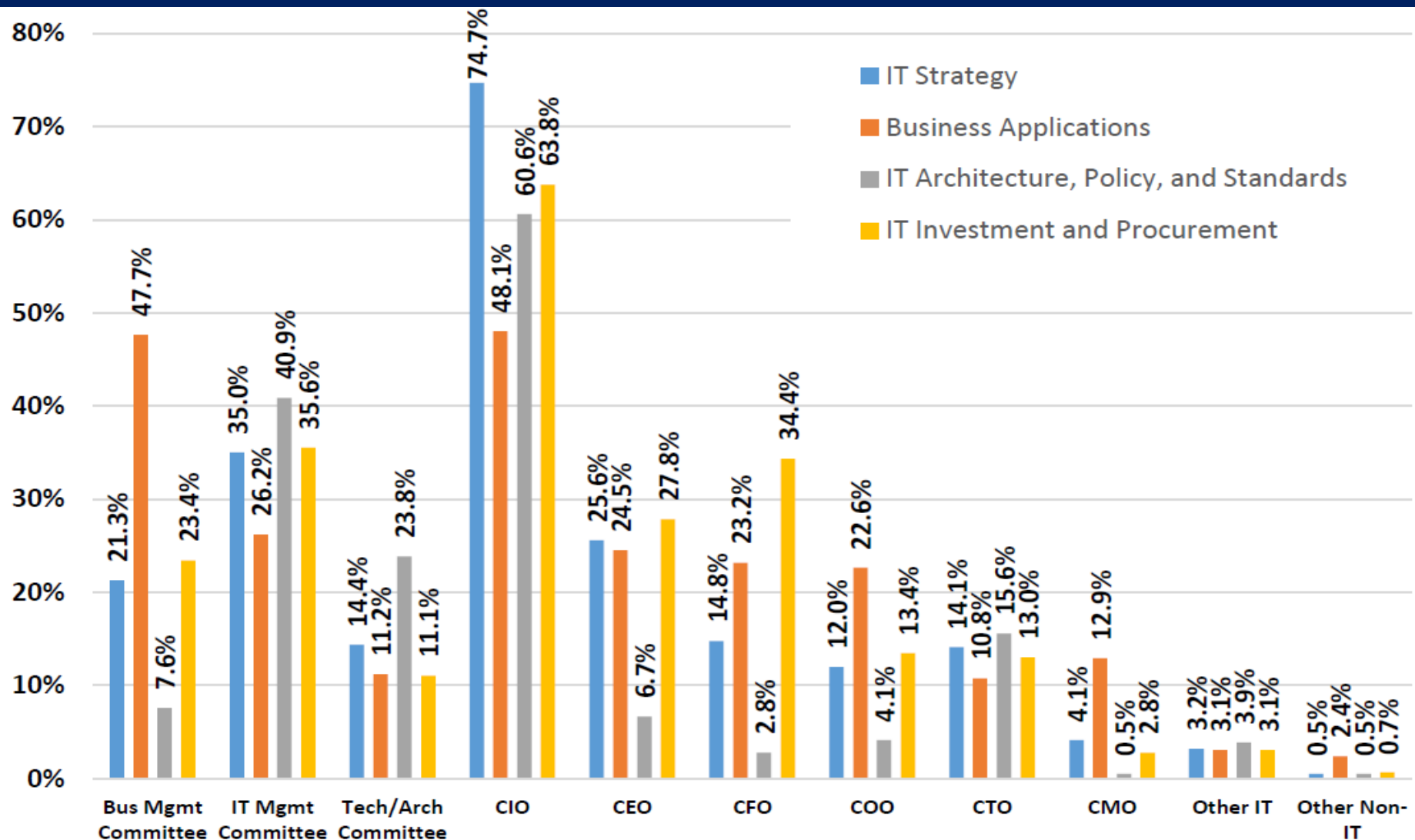
Certificates are comprised of 4 courses.

Courses are 30-40 hours, can be delivered face-to-face & online, meet Master's Degree accreditation standards, & are scalable based on the target audience.

300+ exemplary faculty provide a *balance* of academic rigor & practical relevance.
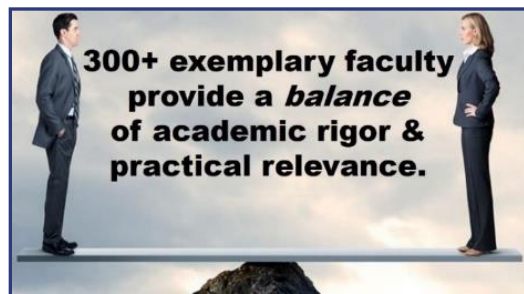
CIO Certification

1. Leadership in Business-IT Management

Executive Certificates

2 - 12. Digital Industry (e.g., Finance, Pharmaceutical, HR, Healthcare, Manufacturing/Engineering, Telecom, Government, Petroleum, Hospitality, Retail, Law, Transportation, Insurance, Education)
13. IT for the Non-IT Executive
14. Managing Vendors & Outsourcing
15. Business-IT Management Consulting
16. Business Process Management
17. Supply Chain Management
18. Managing IT Legal Issues
19. IT Human Resource Considerations

Technical Leadership Certificates

20. CDO Certification
21. Managing Data as an Asset
22. Managing Cloud Computing
23. CTO Certification; IT Infrastructure Integration
24. CISO Certification; Cyber Security Management
25. Social Business/Networking, Mobile Computing
26. Project Management
27. Software Engineering
28. AI
29. Blockchain
30. Technology Enabled Learning
31. Workforce Development

General Management Certificates

32. Effective English Business Communications
33. Non-IT Digital Marketing Certification (CMMP®)
34. IT Digital Marketing Certification (CMMP®)
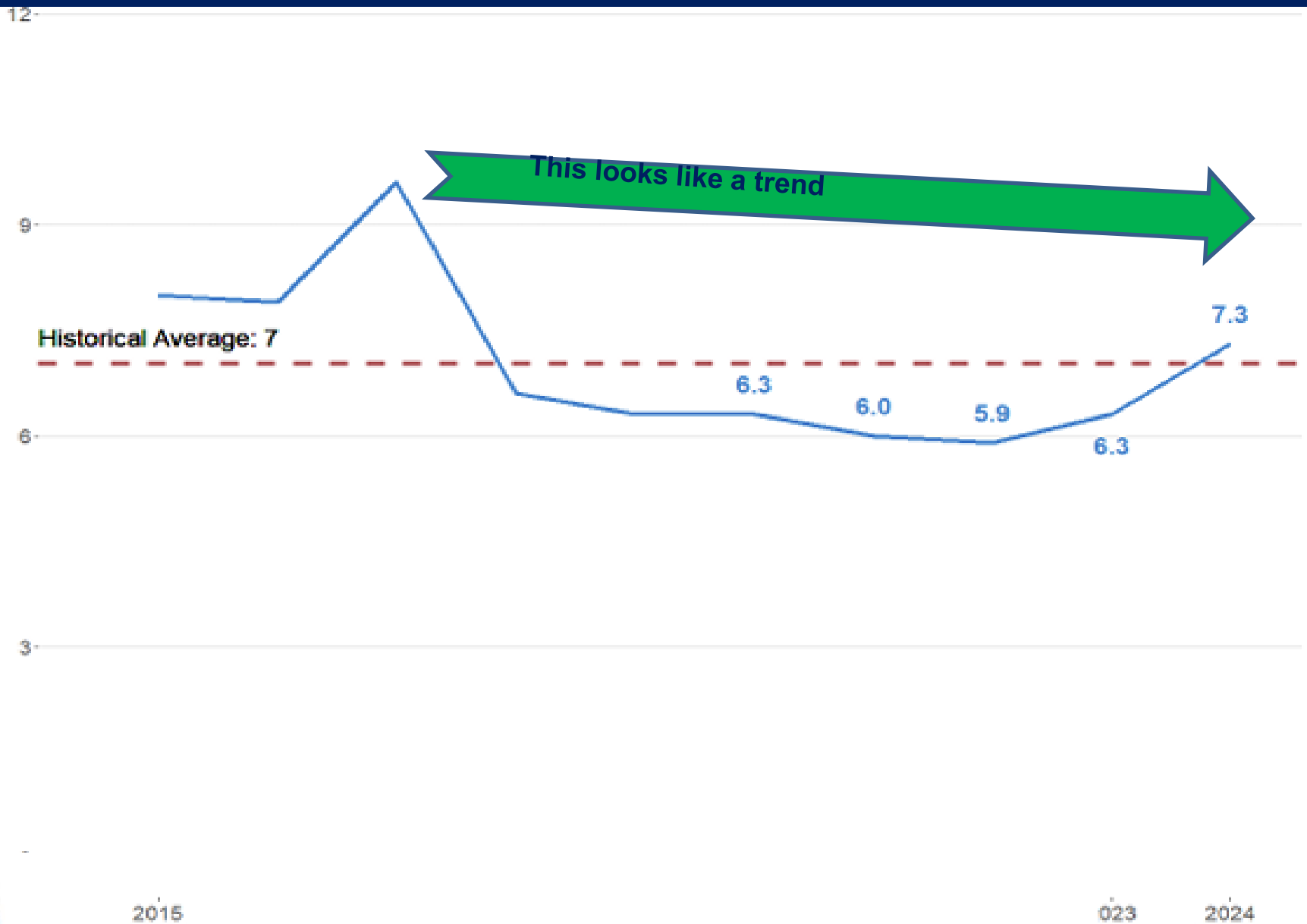35. DigITal Business, Management, & Leadership

Programs for IT & non-IT executives from entry level to C level

For additional information:

- E-mail: info@globaliim.com
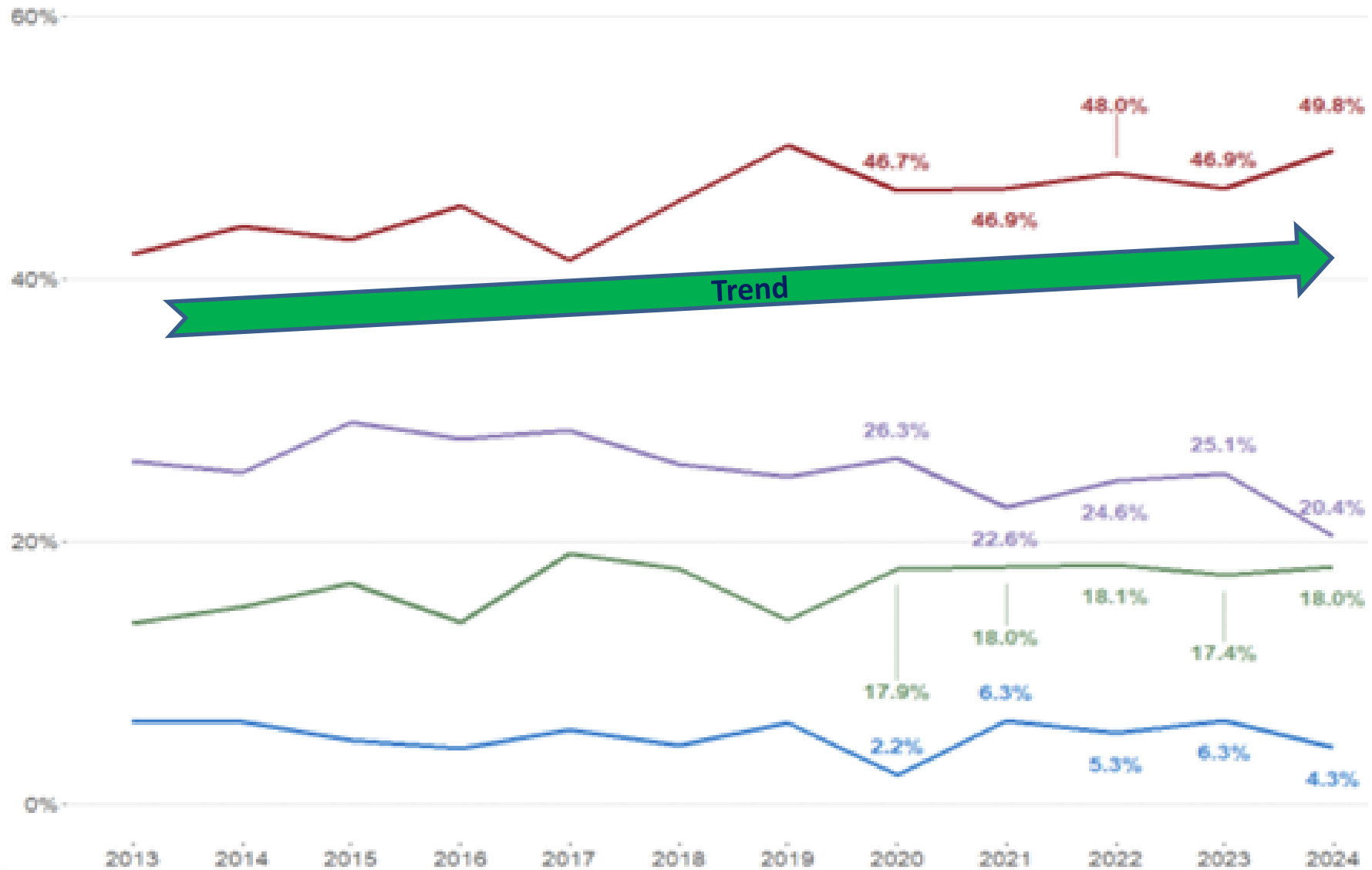
- Web: http://www.globaliim.com
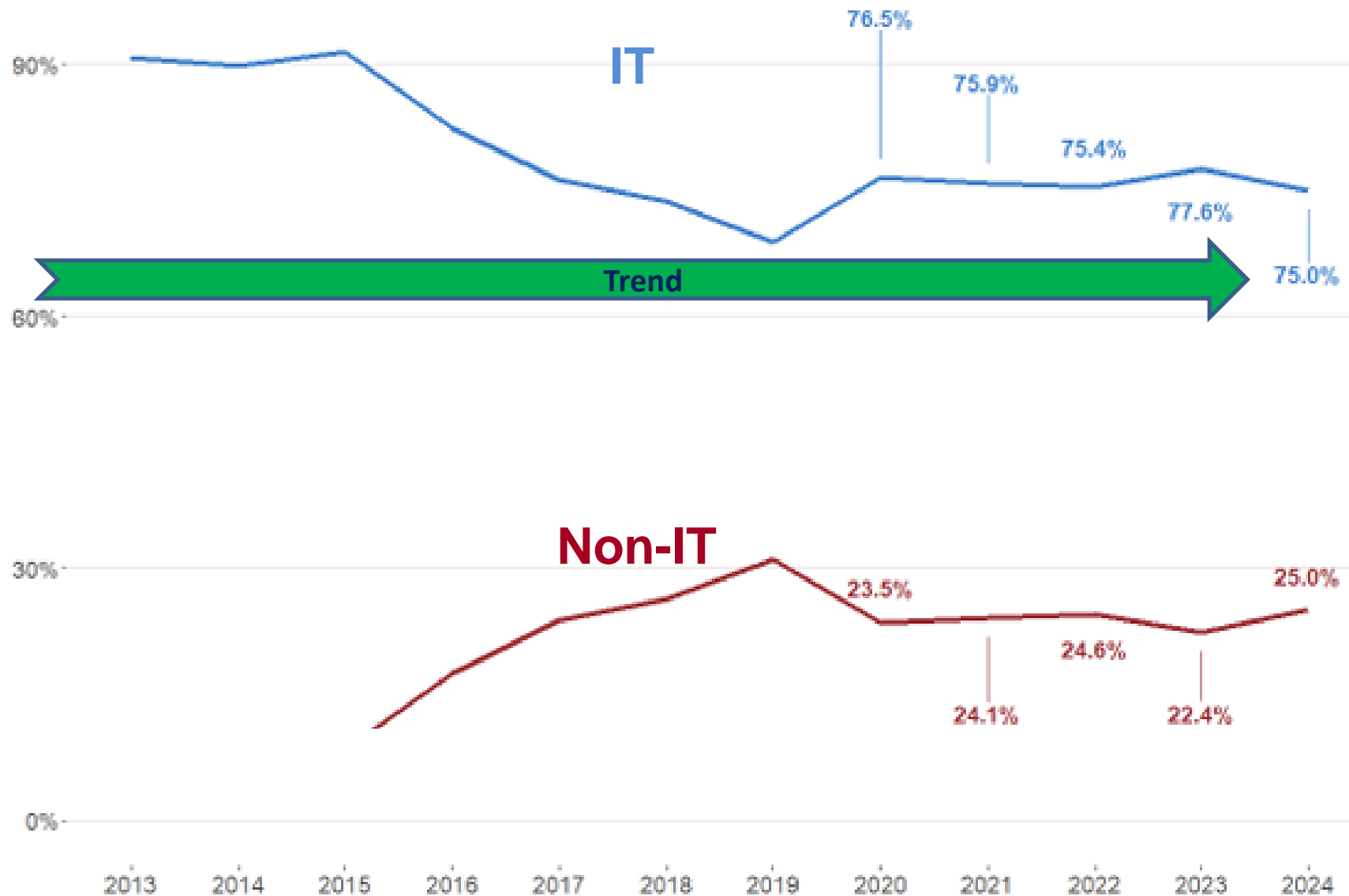
Warren Buffet CEO Berkshire Hathaway since 1970

Average CEO tenure: 9.2 years

TO WHOM CIO OR EQUIVALENT REPORTS

CEO/President   **CFO**   **Business Unit Exec**   **COO/CAO**
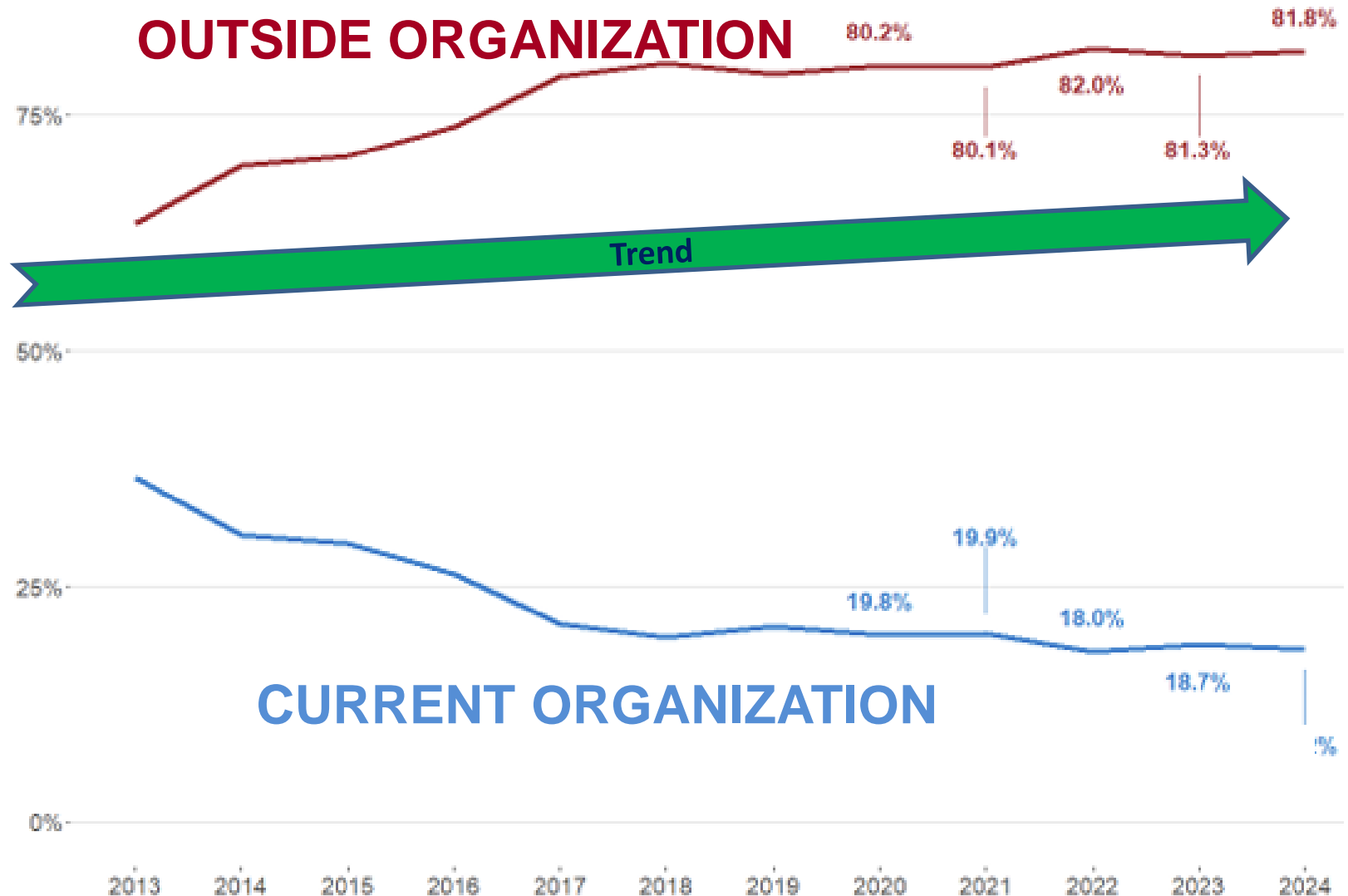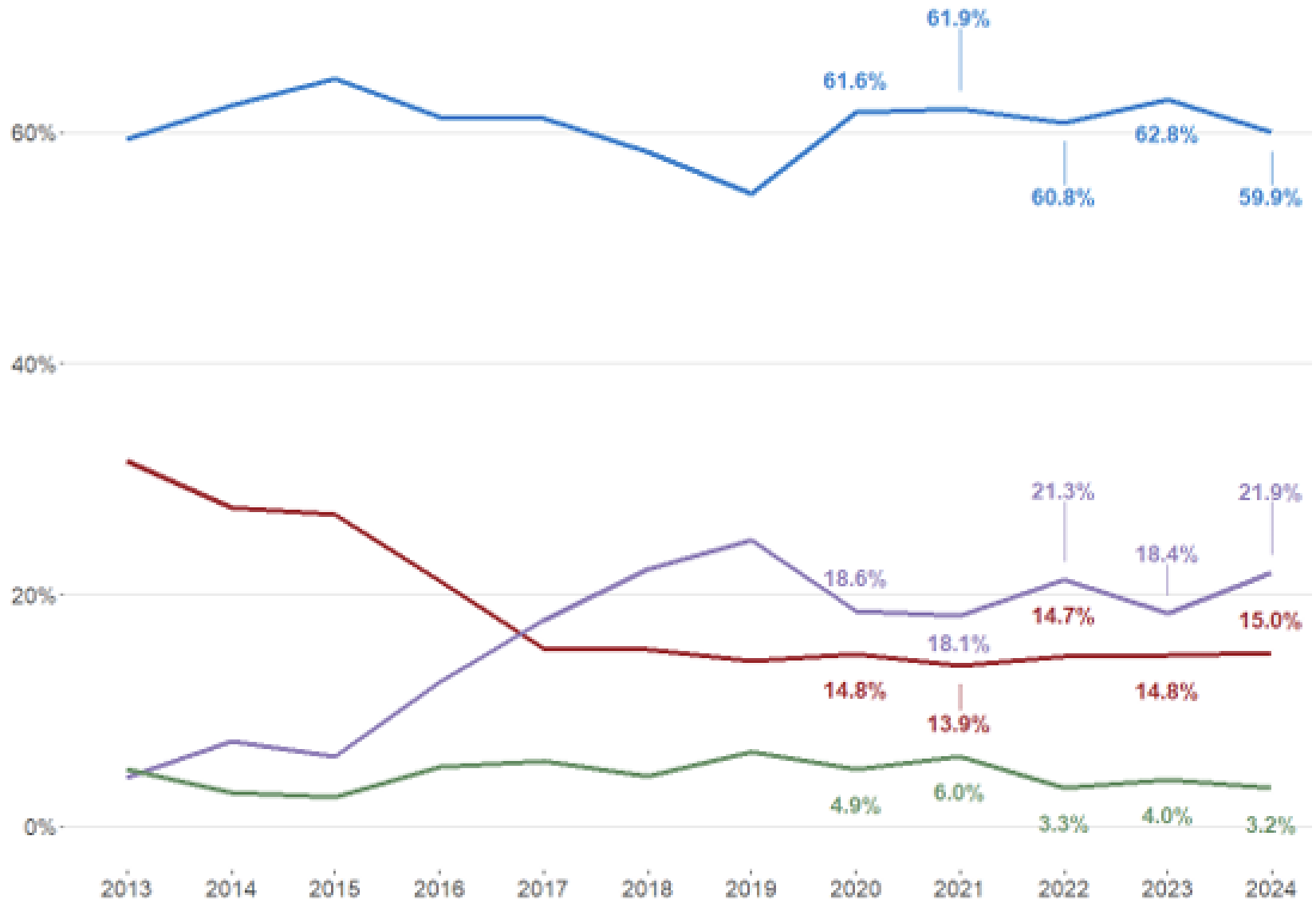
LAST POSITION BEFORE CIO OR EQUIVALENT IT VS NON-IT

LAST POSITION BEFORE CIO OR EQUIVALENT
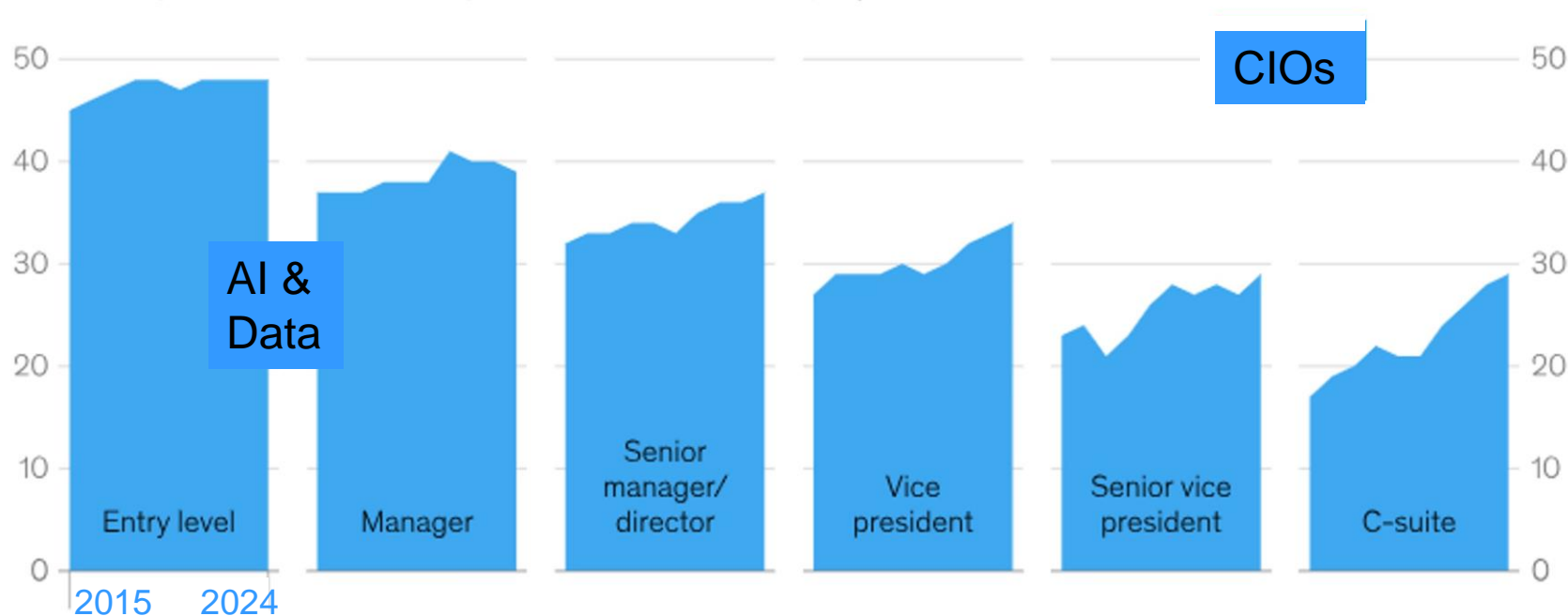## OUTSIDE VS WITHIN CURRENT ORGANIZATION

OUTSIDE ORGANIZATION

80.2%   81.8%

82.0%

80.1%   81.3%

Trend

75%

50%

CURRENT ORGANIZATION

19.9%

19.8%   18.0%

25%   18.7%

0%

2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

LAST POSITION BEFORE CIO OR EQUIVALENT

IT Same **Non-IT Outside** **BNON-IT Same** **IT Outside**

We have seen meaningful, though modest, gains in women's corporate representation.

Women's representation in corporate roles, % of employees

CIOs

AI & Data

2015 2024

Entry level   Manager   Senior manager/director   Vice president   Senior vice president   C-suite

McKinsey & Company

HOW CIOs SPEND THEIR TIME

	2023	2024

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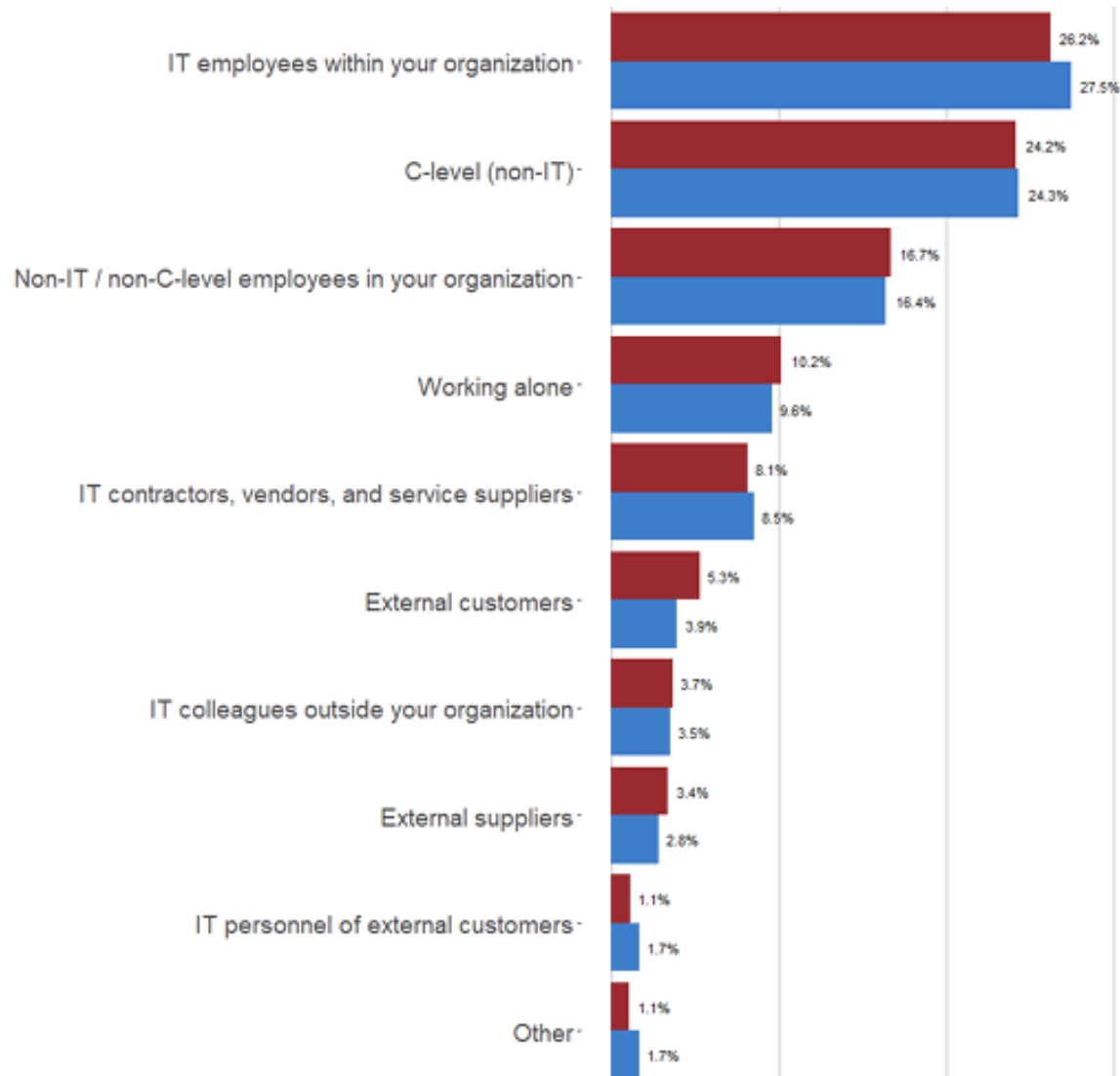
CIOS SPEND THEIR TIME WITH C LEVELS

IT Activities	2024 (n=218)	2023 (n=208)	2022 (n=294)	2021 (n=242)	2020 (n=295)	2018 (n=369)	2017 (n=430)	2016 (n=430)
IT priorities / strategy	1 (73.2%)	1 (70.2%)	1 (74.5%)	1 (74.4%)	1 (75.3%)	1	1	1
Innovation for IT	2 (37.3%)	2 (38.5%)	2 (37.4%)	3 (34.3%)	2 (35.3%)	3	4	4
Evangelist for IT	3 (34.4%)	3 (36.5%)	3 (35.0%)	2 (36.8%)	3 (31.9%)	6	3	2
IT governance	4 (28.7%)	4 (28.4%)	4 (28.0%)	5 (26.9%)	4 (29.2%)	5	2	6
Project Management	5 (23.9%)	5 (24.0%)	5 (22.4%)	4 (29.8%)	5 (25.1%)	2	5	3
IT vendor management	6 (22.5%)	7 (19.2%)	7 (18.5%)	8 (16.1%)	8 (17.6%)	9	9	7
IT operations / facilities management	7 (21.1%)	6 (21.6%)	6 (21.3%)	7 (19.8%)	7 (19.0%)	4	6	5
Resource allocation / budgeting	8 (15.3%)	8 (17.8%)	7 (18.5%)	6 (21.5%)	6 (22.7%)	10	10	10
IT HR and talent management	9 (13.9%)	9 (15.4%)	10 (12.9%)	10 (12.0%)	10 (11.5%)	8	8	9
IT architecture	10 (13.4%)	10 (12.5%)	9 (14.7%)	9 (14.0%)	9 (16.9%)	7	7	8
Technical research	11 (7.7%)	12 (6.2%)	12 (6.3%)	11 (7.0%)	11 (7.1%)	11	11	11
Software development	12 (7.2%)	11 (6.7%)	11 (6.6%)	12 (6.2%)	12 (6.8%)	12	12	12

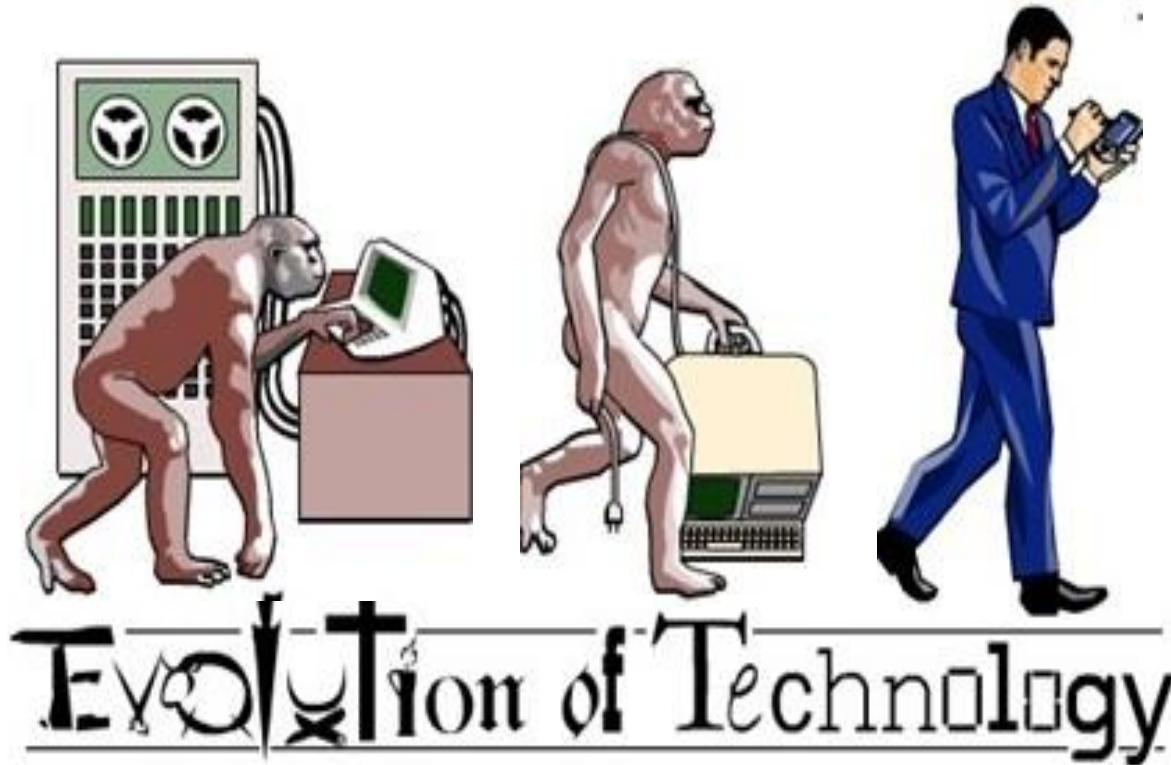# BUSINESS LEADERS/EXECUTIVES EXCITED & PARANOID

<u>Organizations need leaders & managers to</u>

- ➤ Identify what questions to focus on
- ➤ Understand the business issues
- ➤ Make judgment calls
- ➤ Align IT & business considerations

<u>What happens to the role of the IT/business leader?</u>

- ➤ Order Taker → Order Shaker…Future Focused
- ➤ Integration of technologies & security
  - ✓ **S**ocial
  - ✓ **M**obile
  - ✓ **A**nalytics, Big Data, IoT
  - ✓ **C**loud
  - ✓ Legacy Systems
- ➤ Significant organization & governance factors CIO vs CDO/CAO (Analytics or AI) vs CISO vs CTO

Evolution of Technology

How ↓ What

LEADERSHIP

Decisions, Strategy, Challenges, Team work, Creativity, Motivation, Ambition, Vision

"Without deviation from the norm, progress is not possible"

Frank Zappa

Don't get left behind.

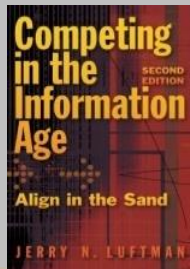**The digITal future is VERY EXCITING for those prepared!**

The next move is yours