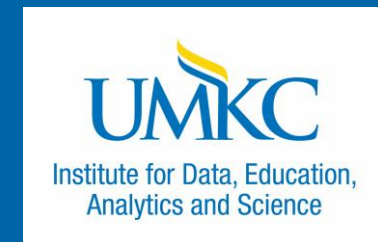


Human Capital Management

Who is the accountant of the future?



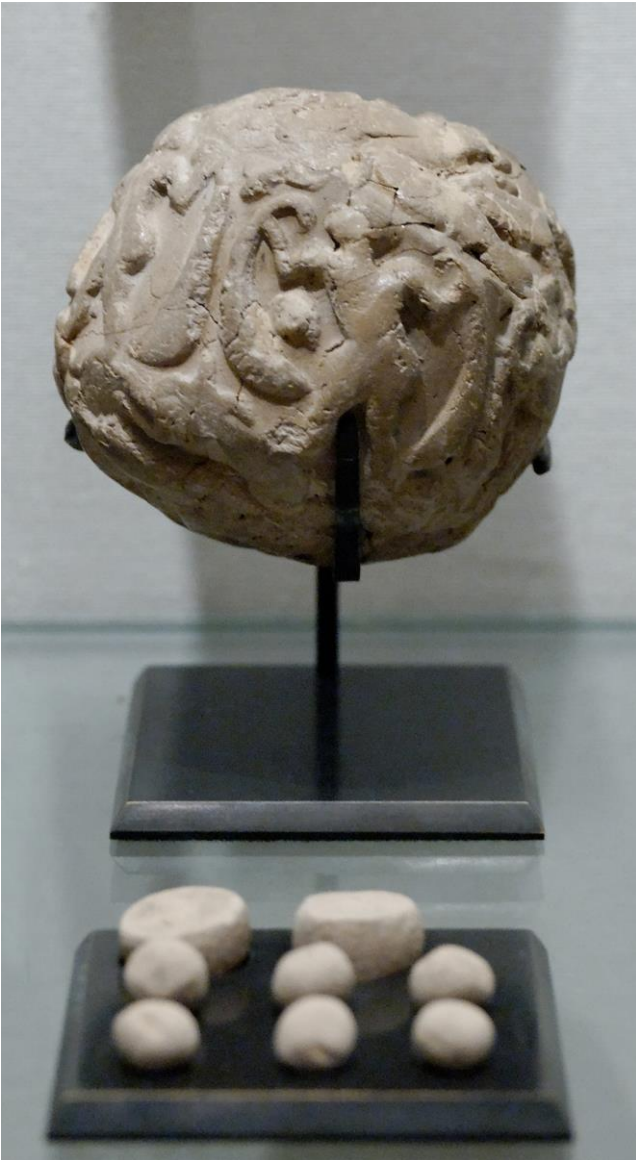
Topics for today

Who is the accountant of the future

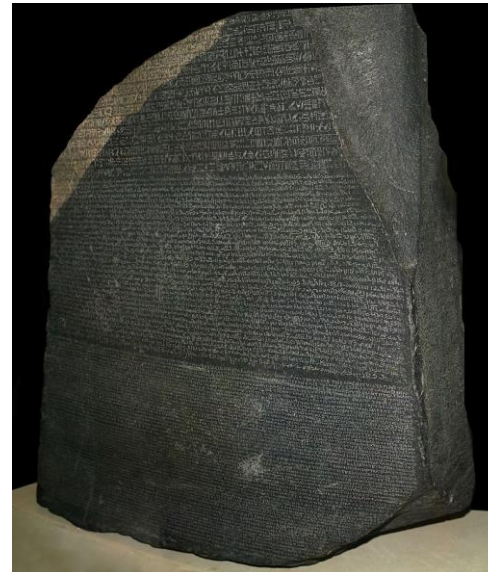
1. Who is the accountant of the past
2. Changes coming our way and new skills required
3. Certification?
4. Development of talent in the region
5. How to attract and retain top talent

History of accounting

- Accounting records date back over 7,000 years
- 4th century BC saw the introduction of auditing systems for tracking goods in storehouses and oral “audit reports”
- The Rosetta stone was actually a tax document
- 1494 – Luca Pacioli first double entry system (math text)
- 1500-1700 – East India Company develops the idea of capital and dividends



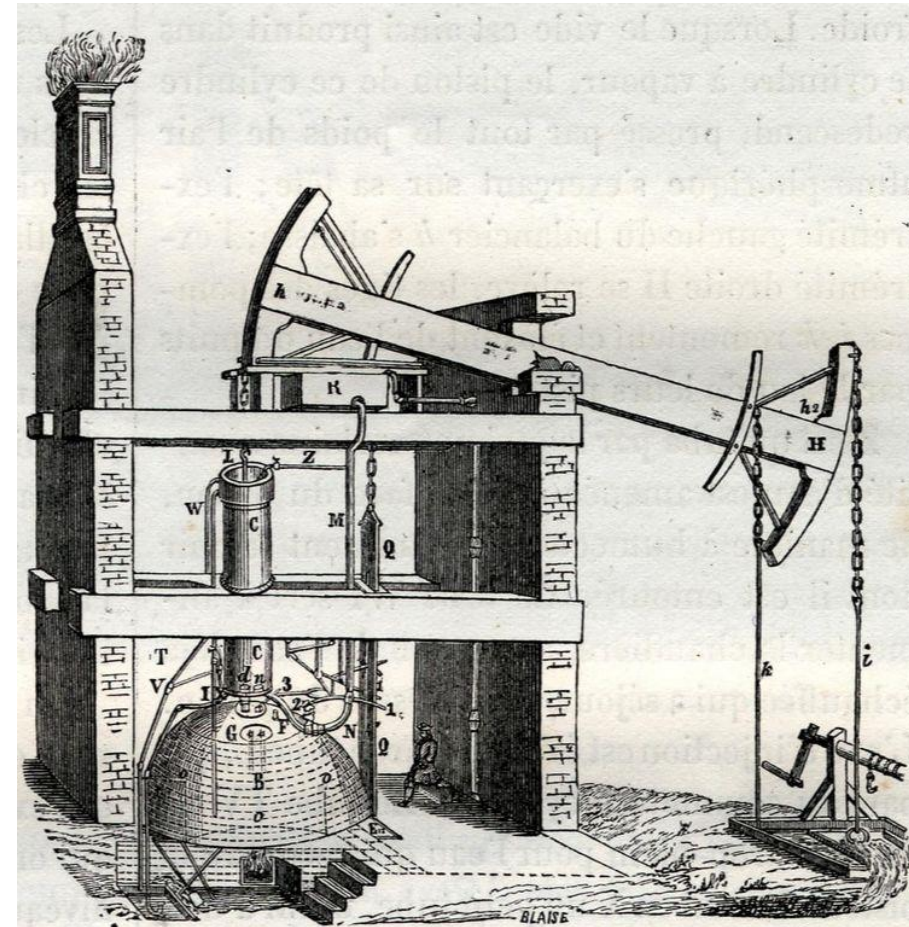
Bulla (globular envelop), Louvre Museum



Rosetta Stone British Museum

History of accounting (modern)

- 1700-1900 - The industrial revolution and modern concepts of accounting
- Need for professionalization and standardization
 - 1880 Institute of Chartered Accountants in England and Wales
 - 1887 AICPA is established
- 1930-1934 Response to fraud establish precursor to GAAP and standard audit report
- 1940-1960 – Accounting as a profession
 - Development of large accounting firms
 - Service of public interest
- 1980-current – no longer accounting firms, now business advisory firms that have accounting as a business line.



Invention of the steam engine, Historycrunch.com

Industry 4.0

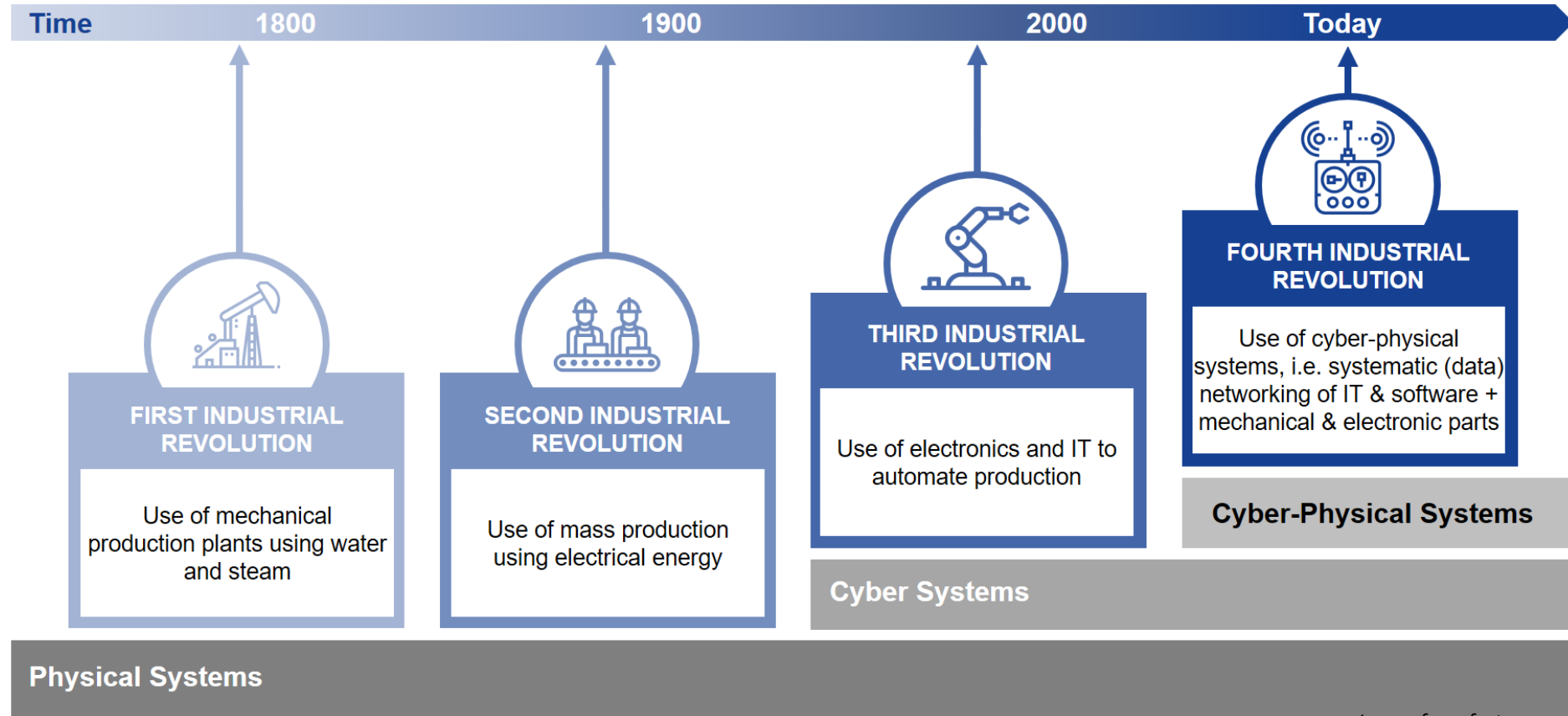


Image from fostec.com

Why Now?



Image from AICPA

UMKC

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After Automation

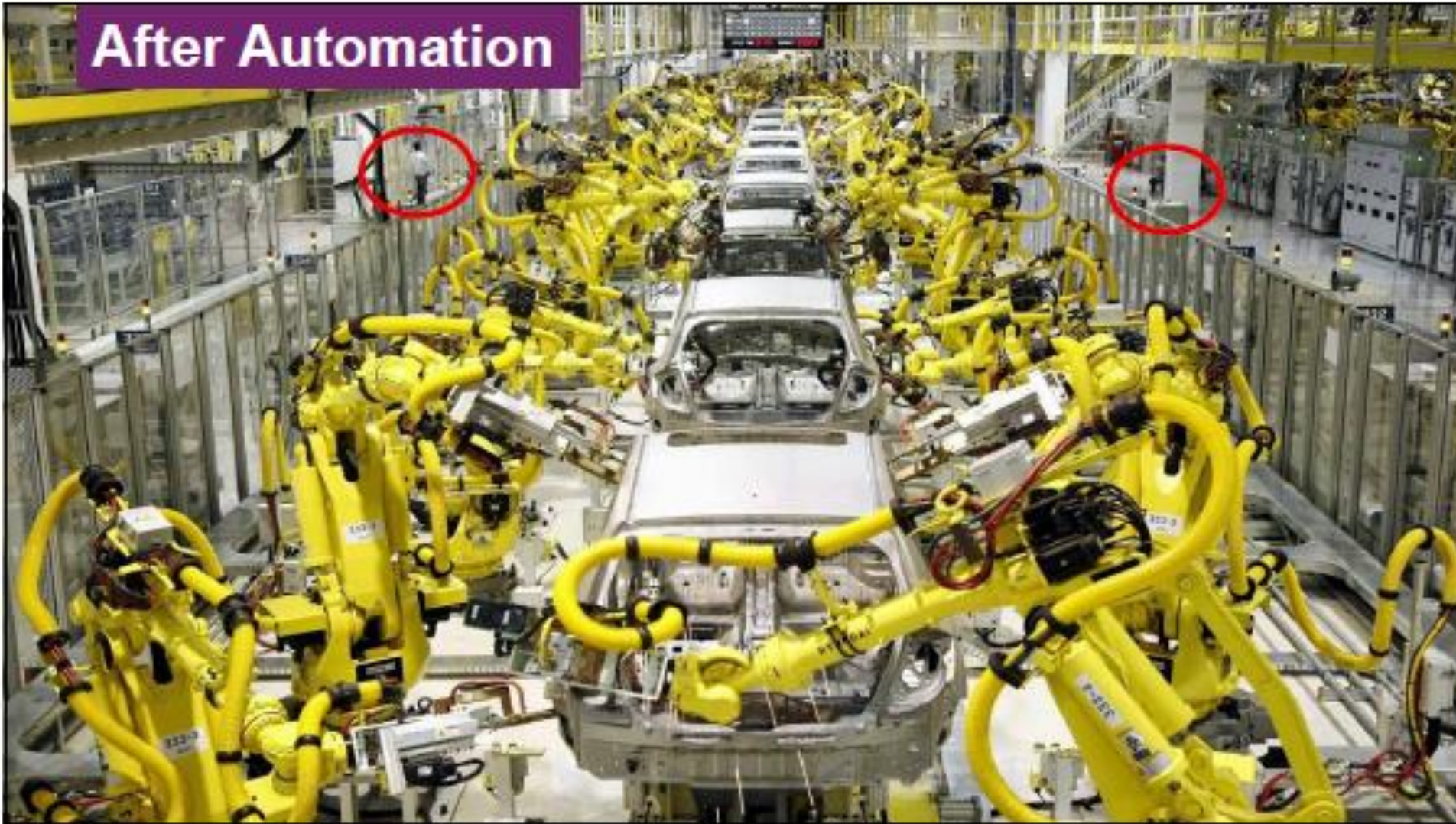


Image from AICPA

Before Automation

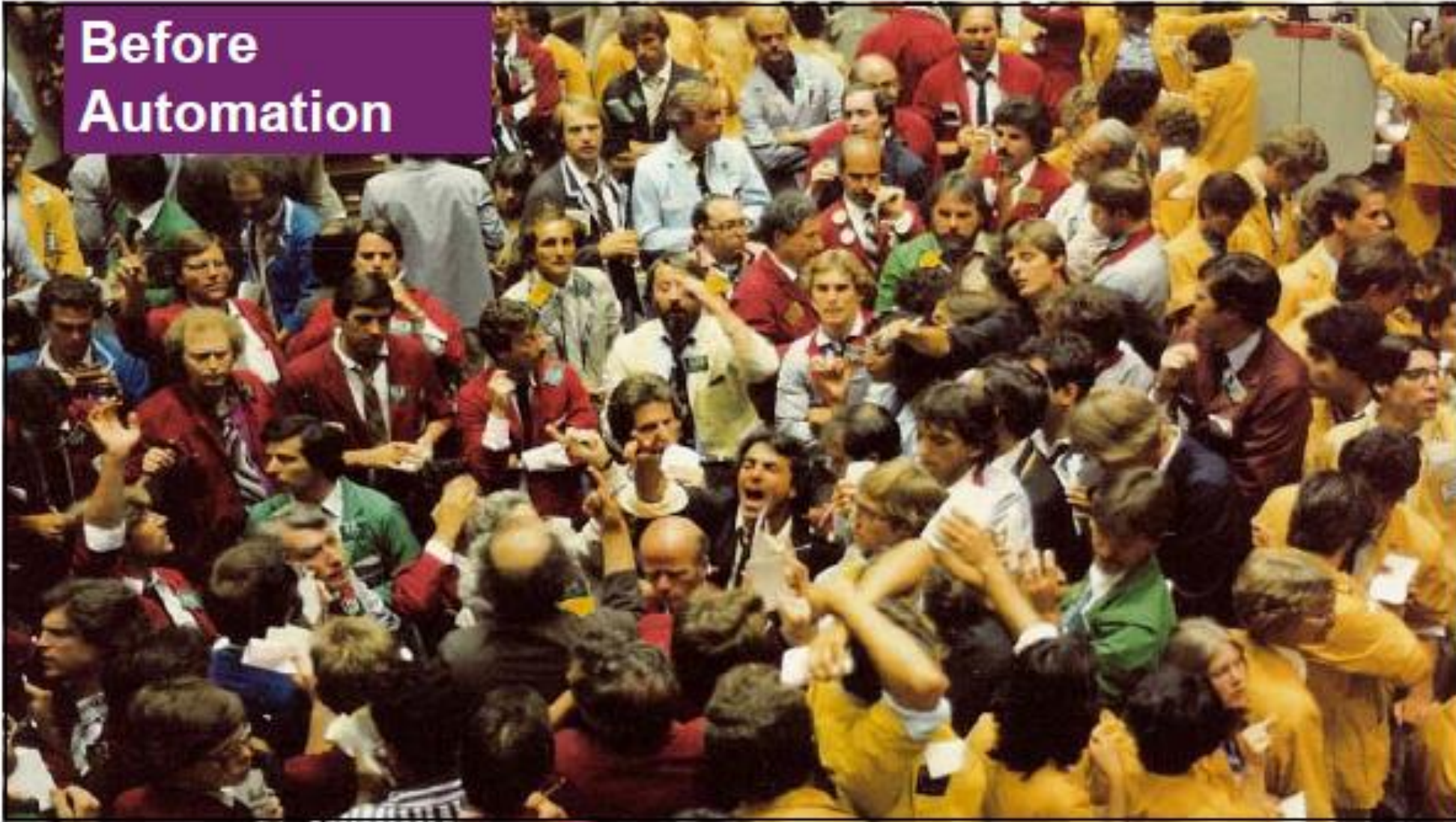


Image from AICPA

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After Automation

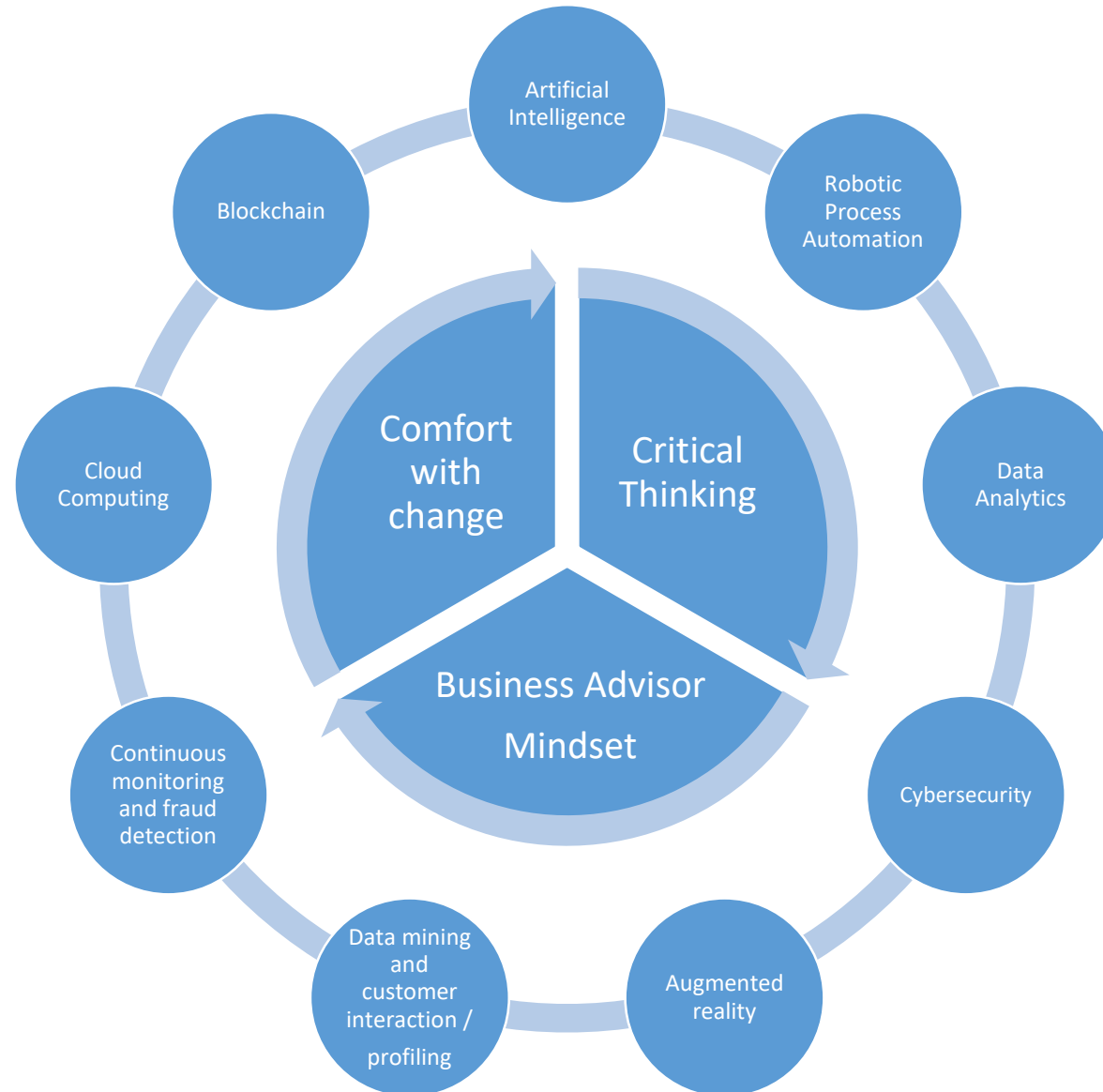


Image from AICPA

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New skills for today and tomorrow



The world is changing

Body of knowledge

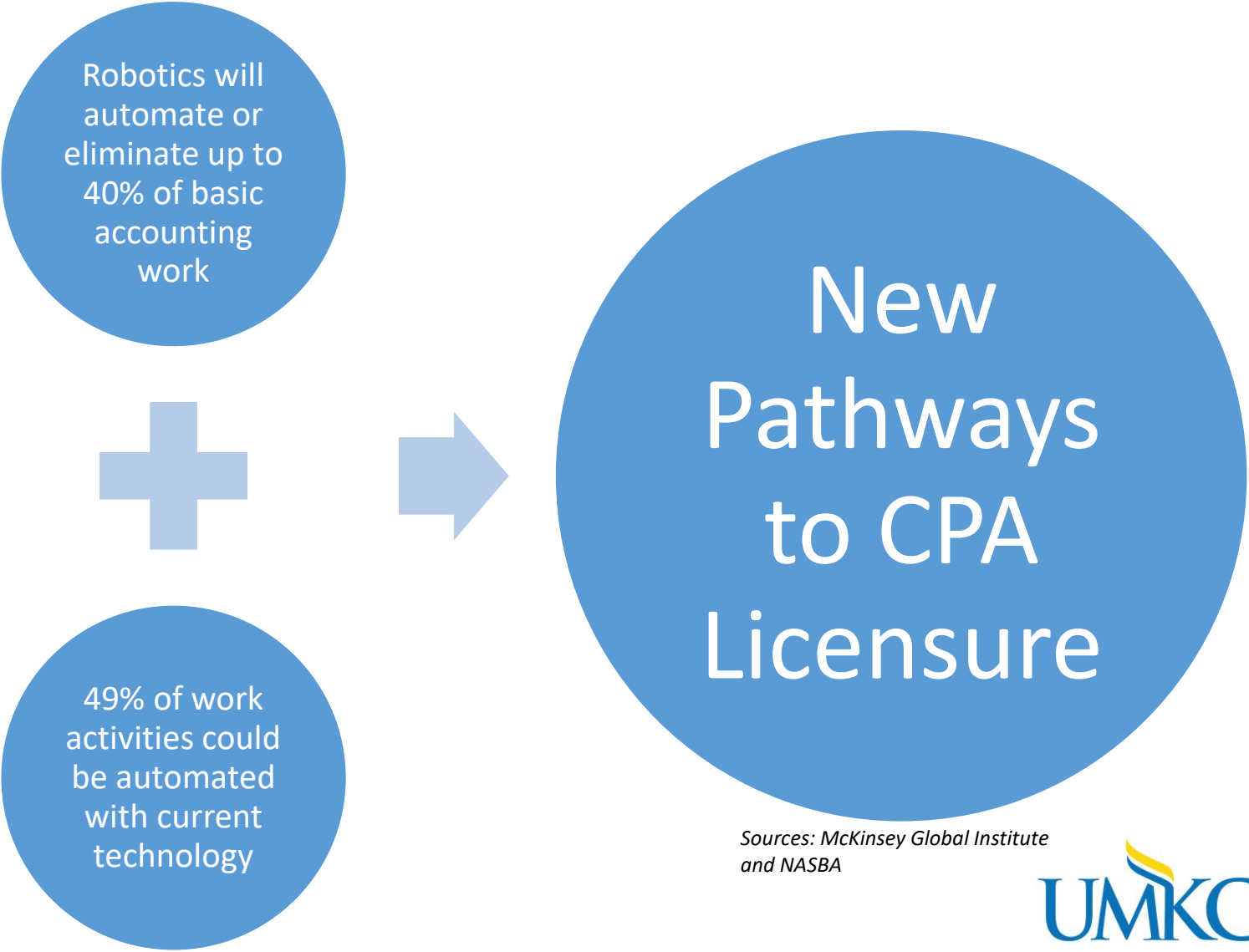
Today compared to 1980:

- 3x as many pages in the Internal Revenue Code
- 4x as many accounting standards
- 5x as many auditing standards

New skills per AICPA

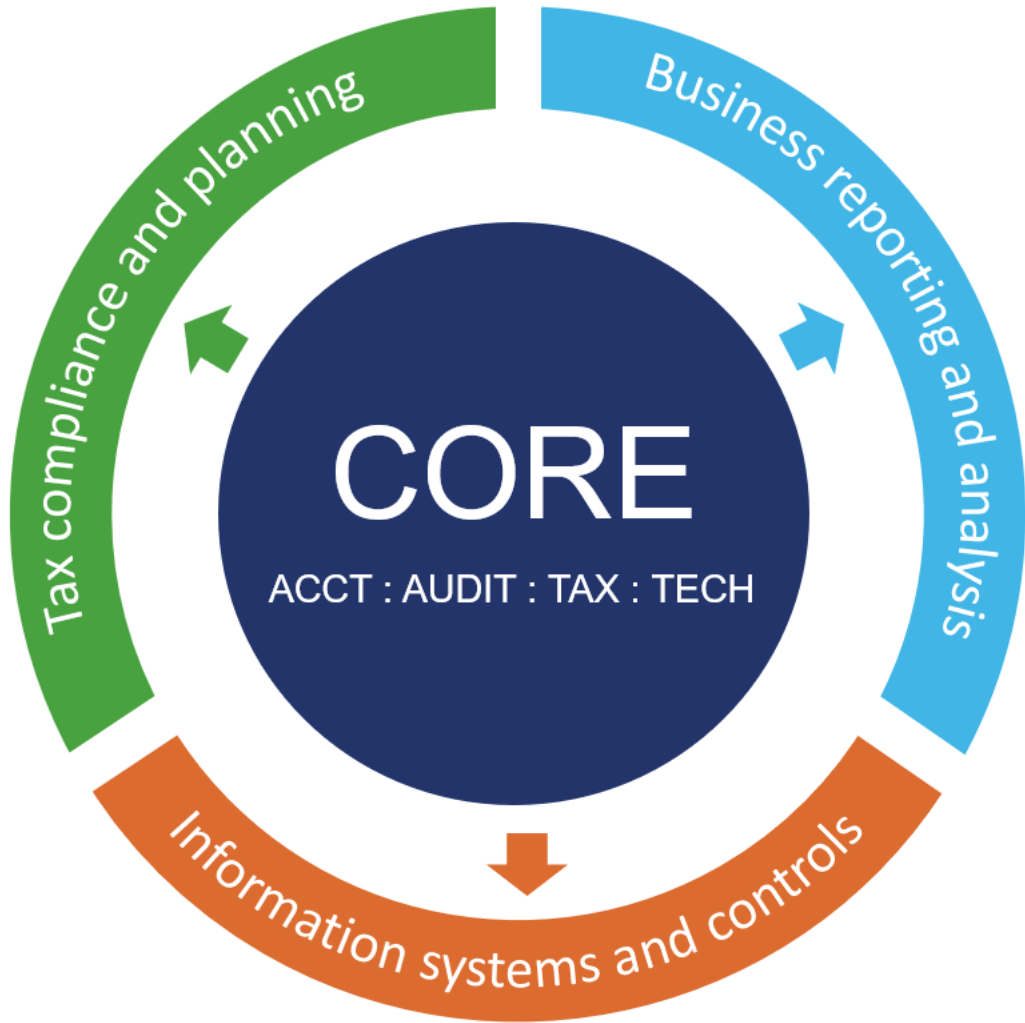
- Critical thinking
- Professional judgement/skepticism
- Problem solving
- Understanding business systems, controls, risk
- Data management and analysis

New skills for today and tomorrow



Sources: McKinsey Global Institute and NASBA

The Engineering model



= CPA

From AICPA



The Engineering model

Steps to become an engineer

1. Graduate from an accredited 4 year school
2. Pass the fundamental exam (FE)
3. Complete a practice requirement (4 years)
4. Apply for and pass the Principles and practice of engineering Exam (PE) for your particular discipline
5. Apply to individual state for licensure

Steps to become a CPA?

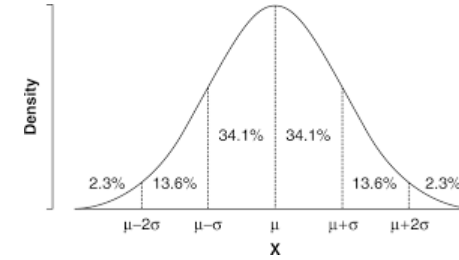
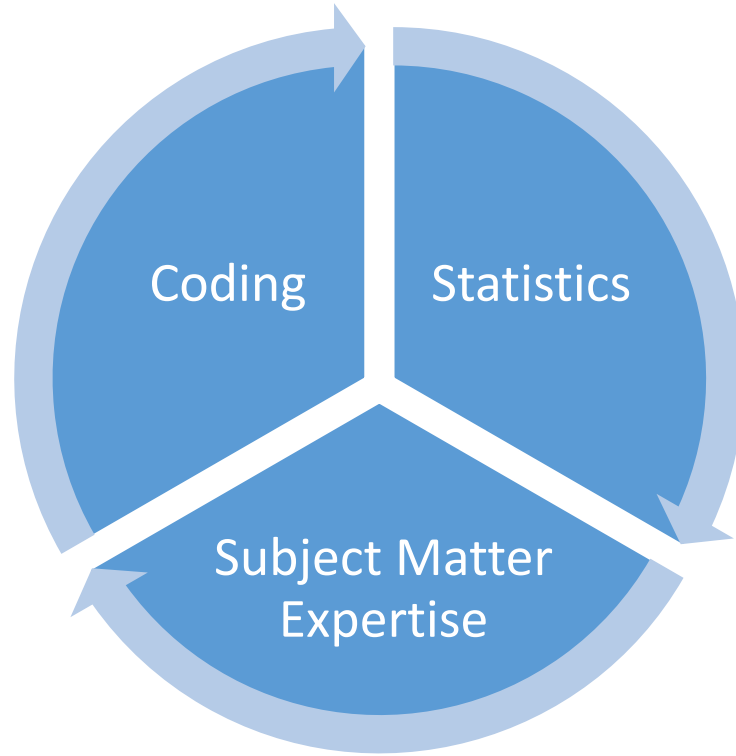
1. Graduate from an accredited 4 year school
2. Pass the core exam
3. Apply for and pass the advanced exam for your particular discipline
4. Complete a practice requirement (4 years)
5. Apply to individual state for licensure

Data Science as the “IT” Concept

- The recent covers from the *Harvard Business Review*



Data Science as a Bundle of Skills



THE PROBABILITY OF "B" BEING TRUE GIVEN THAT "A" IS TRUE

THE PROBABILITY OF "A" BEING TRUE

THE PROBABILITY OF "A" BEING TRUE GIVEN THAT "B" IS TRUE

THE PROBABILITY OF "B" BEING TRUE

$$P(A|B) = \frac{P(B|A) P(A)}{P(B)}$$



Resources within the region



University of Kansas

- Two course sequence in systems and analytics for all undergrads
- Accounting students take additional courses covering big data, RPA, AI and Blockchain as well as tools like SQL, IDEA, Access and Power BI
- A very large pool of elective options
- Many students double major/minor in Business Analytics or Systems

Resources within the region



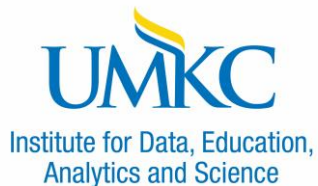
Kansas State University

New accounting curriculum

- Bookend degrees with focused data analytics courses
- Full integration and application of tools across curriculum
- Data Analytics Certificate program
- Dual degree MBA-Engineering

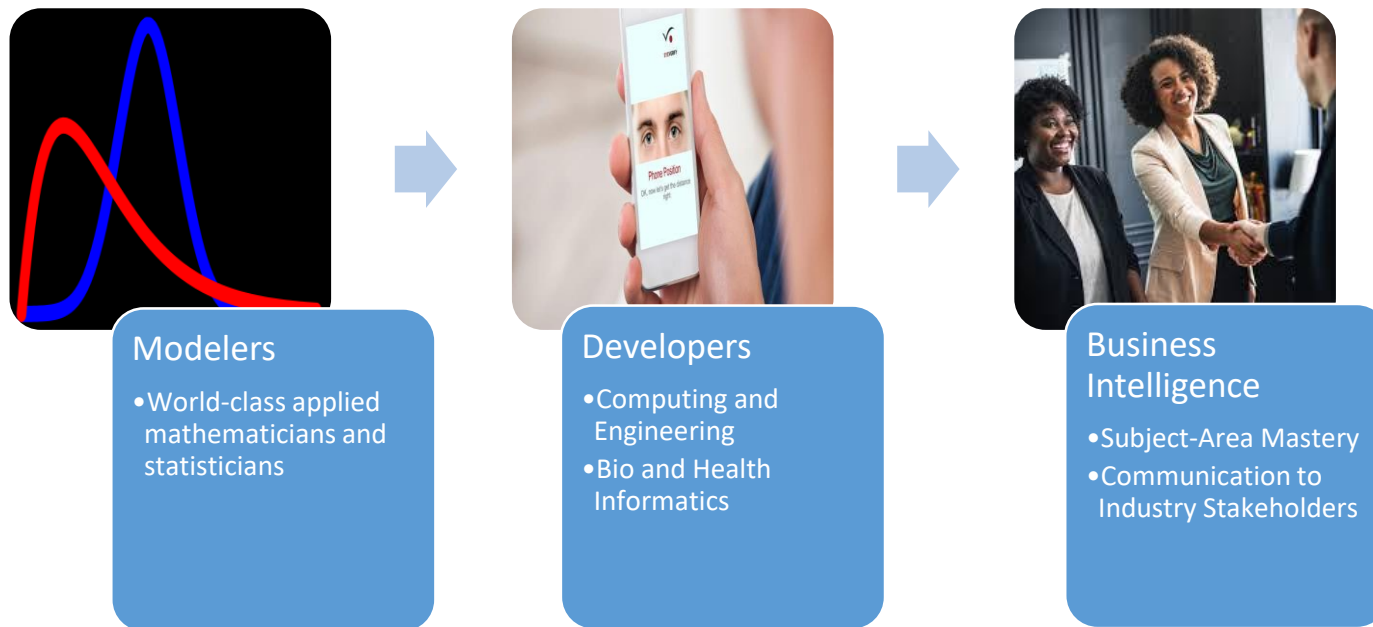
Institute for Data, Education, Analytics and Science (IDEAS)

- UMKC is the UM System Center for Excellence in Data Science
- IDEAS is a campus-level institute aimed at:
 - Creating a workforce trained in data science and analytics
 - Developing cutting-edge translational research
 - Serving the data-science needs for regional industry

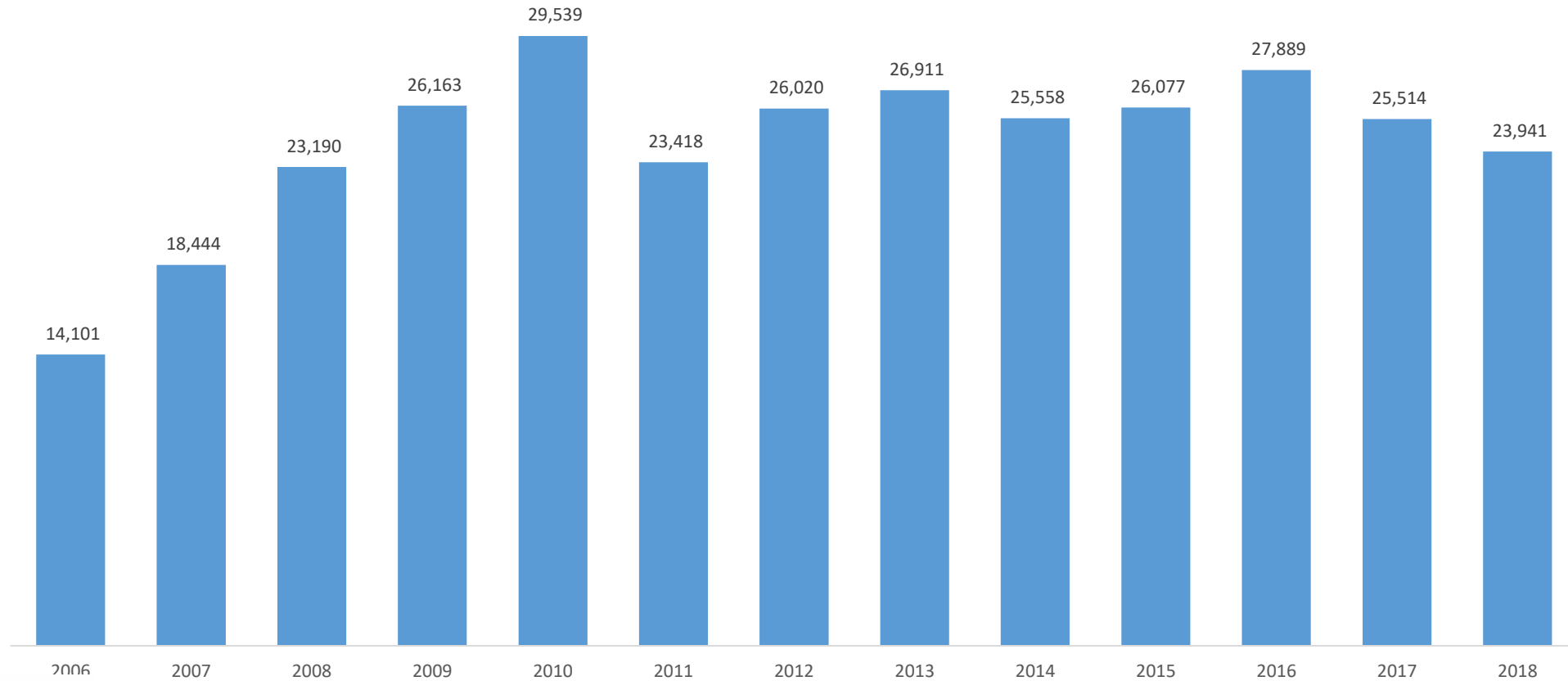


UMKC a Comprehensive University

- UMKC is the comprehensive university in the Kansas City region, able to follow the data-science value chain



CPA exam passers by year



Source: 2019 Trends Report AICPA

Attracting and retaining talent

- **Employee desires**

- Work life balance
- Training in new technologies
- Flexibility
- Opportunity for training and growth
- Purpose (make a positive impact on community and society)

- **Employer reality**

- Already understaffed
- Lack of good candidates
 - 47 % of CFO's call it a top concern
- Limited budgets
- High cost of employee benefits

Thank You!



BLOCH