The Digital Solutions Gallery

"Digital Solutions Gallery Virtual Keynote Session"
July 21, 2022
10:00am ET – 11:30am ET

"From IT Leadership To Business Leadership"

Cheryl Smith

CIO Emeritus:

McKesson Corp.

KeySpan Energy (now National Grid)

WestJet Airlines

VP, Strategic Systems, Verizon

Cheryl Smith
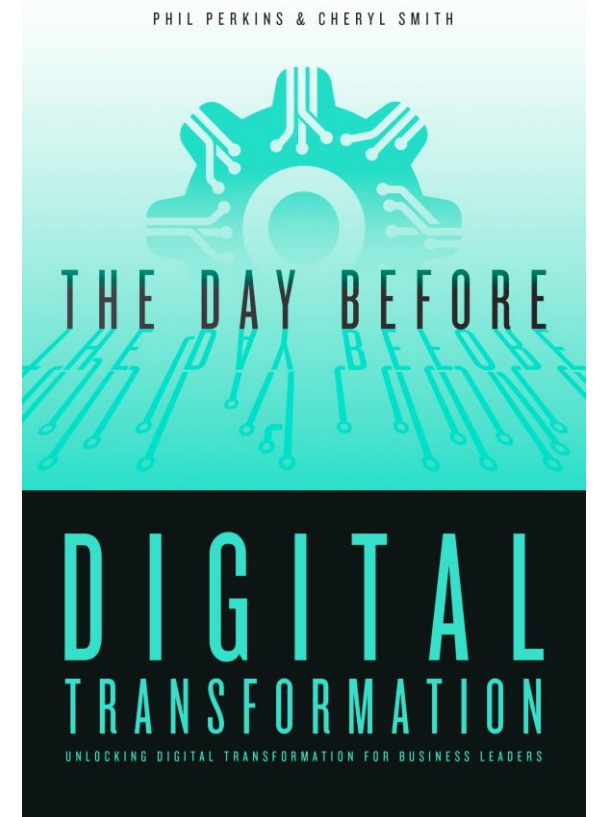
EXPERIENCE HIGHLIGHTS

- Current: Independent Consultant

- 17 years Global CIO for major corporations (McKesson, KeySpan, WestJet, Cendant)

- 3 years CEO telecommunications start-up (utility.net—Broadband over Powerlines)

- 10 years VP of IT (Verizon, Honeywell Federal Systems)

- Prior to corporate IT Leadership positions—Principal, Ernst & Young; Programmer, House Information Systems, US House of Representatives

- Penn State: BA and Master's Degrees (Thesis: Computers in Public Organizations)

EXPERTISE AREAS

- Building IT infrastructures and application systems

- Leading IT and business operations

- Establishing IT business strategy

- Negotiating $10—500M+ contracts

- Public Relations (financial community, Boards, customers, federal agencies)

- Public Speaking (IT Conferences, Universities, Executive Summits, Expert Witness)

BOARD MEMBERSHIPS:

- Rocket Wagon (IoT experts. Headquarters Chicago)

- Research Board (top 50 corporate CIOs worldwide)

- CIO Institute, UC Berkeley (co-founder)

- Oracle Advisory Board (former)

- IBM Advisory Board (former)

PHIL PERKINS & CHERYL SMITH

THE DAY BEFORE

DIGITAL TRANSFORMATION

UNLOCKING DIGITAL TRANSFORMATION FOR BUSINESS LEADERS

#13 Best New Business Strategy Books of 2022
Bookauthority.org

CIO title created 1980, beginning of Digital Age

YEARS	LONGEVITY	INDUSTRIAL REVOLUTION AGE	DESCRIPTION
10,000 BCE	12,000 years	The Agrarian Age	Transition from nomadic lifestyle to agricultural and settlement
1720-1830	110 years	IR1: The Age of the Steam Engine	First technology leap: from hand production of food, clothing, basic products, and transportation to machine production
1830-1910	80 years	IR2: The Age of Electricity and Mass Production	Second leap: invention of electricity and major industrialization that revolutionized communications, manufacturing, transportation
1910-1980	70 years	IR3: The Electronic Age	Third leap: major advancements in medicine, energy, space travel, and entertainment. Analog electronic devices are invented
1980-2040	60 years (predicted)	IR4: The Digital Age	Fourth leap: lines between the physical, digital, and biological sciences blur; predicted to be the final Industrial Revolution
2040-2090	50 years (predicted)	The next Age in Revolutions	Technology continues to advance, but Age anticipated to be focused on what the technology is creating, not on the technology itself

Source: Research by the Authors

We have until 2030 before value taken & GDP growth falls until the next Age innovation begins (est 2040)
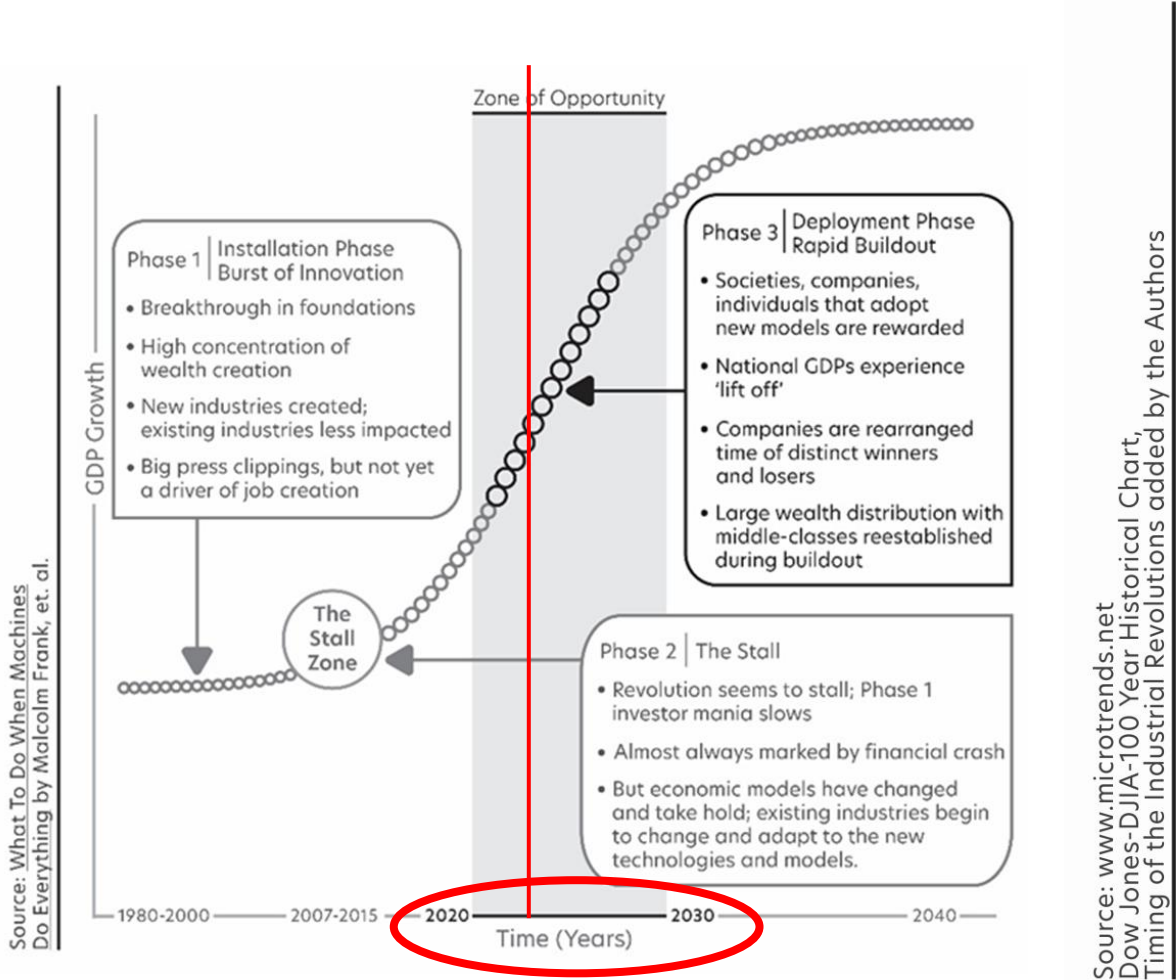
3 stages of each Industrial Revolution
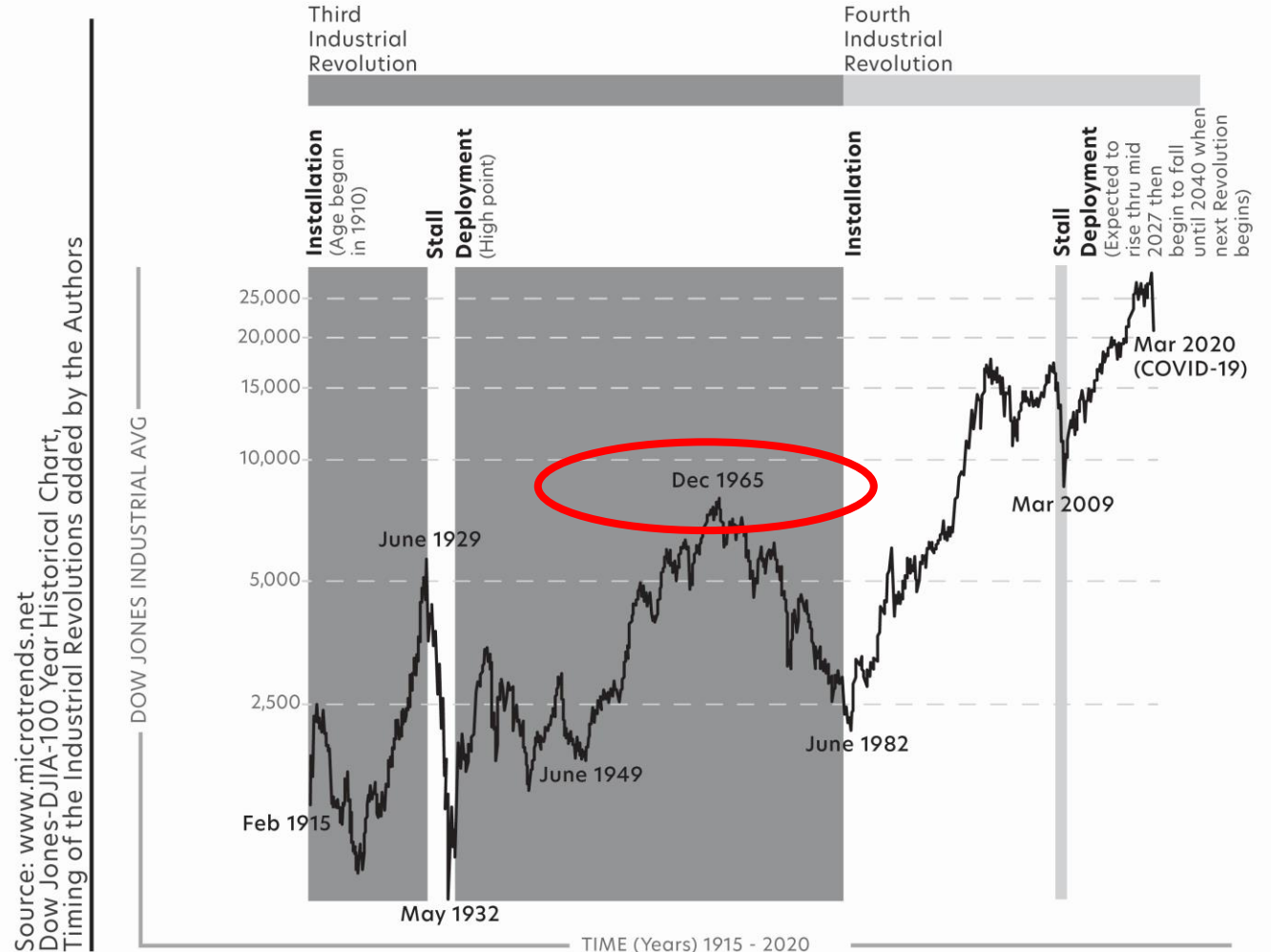
DJIA month-end closing values since Jan 1915

Early Age Stage

Primarily deployed inside organization

- Technologies bring great advantages but physical large and immature

- 25-30 years to mature

Later Age Stage

Begin to be built into customer offerings

- Technologies advance and miniaturize

- Cost decreases

- Built into direct consumer product and service offerings

Historical patterns clear: Business leaders responsible for implementing technologies into products, services, and ways of doing business

Role of the CIO during the Digital Age

√ **1980-2010 Technologies Back Office**

- IT teams experts at implementing the early digital technologies inside organizations

- Technologies serviced all business units

Financial & HR systems
Procurement & Logistics systems
Internet/Intranet
Server farms
DBMS
Identity Management
Notification systems
Content Management

X **2011-2040 Technologies Direct to Customers and Operations**

- Business leaders building technologies into product and service offerings and ways of doing business:

Smart cars/driverless cars
Work from home Call Centers
Robotics and edge computing in factories
3D printing for localized manufacturing and distribution
Smart appliances
Mass customization
Targeted marketing and sales

What is the role of the CIO and IT team today?

**Four critical technology responsibilities
that cross all business units and no other
team can do expertly (or care about):**

1. **Infrastructure**
   a) Hardware
   b) Operating system software
   c) Middleware
   d) Organization-wide internal support application software
   e) Facilities (Data Center and telco)

2. **Telecommunications** (voice and data)

3. **Information security** (protection to all infrastructure components, telecom, and data)

4. **Data management**

Role of the CIO and IT team

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Are they still needed?

Cost of hiring an inexpert CIO and mediocre technology team:

- **US costs in 2020: $2.08T:**
  - Operation software failures--$1.56T
  - Operations and maintenance of legacy software—$260B (reduced 50% due to overlap)
  - Unsuccessful development projects—$260B

  + Software technical debt--$1.31T (future cost)

The Cost of Poor Software Quality in the US: A 2020 Report, Consortium for Information & Software Quality (CISO), Jan. 7, 2021.

- **Global cyber losses in 2020: $2T**

This Is How They Tell Me the World Ends, Nicole Perlroth, Bloomberg Publishing, Feb. 2021, page 392.

CIOs must be technology certified

CFO is required:
- Degree in accounting,
- Certified Professional Accountant (CPA)
- Master's degree in finance, business, or accounting.

General Counsel is required
- Law degree from an accredited law school,
- Pass the Bar exam,
- Hold a current certification to practice law in the State or States where the business is located.

CIO is required
- to know no more about technology than how to use a cell phone.

A CFO or General Counsel could go to prison for having a role in the annual losses we have outlined;

the CIO has no accountability and rarely even gets fired for incurring such losses.

CEO v CIO skills sets required

CEO

- Financial skills to deal with investors and to sign off on quarterly and annual financial reports

- Marketing and sales skills to make major decisions about customer base

- Knowledge of the marketplace, competitors, and industry

CIO

- Detailed expertise and experience in one or more of the four IT Digital Age technology pillars

- Knowledge of the Digital Age technologies and vendors

- Experience in implementation and operation of IT systems for five 9s availability

Summary:

1. Building digital technologies into products, services and ways of doing business is necessary for an organization's survival

2. Business leaders are responsible for customer products and services, *not* IT

3. IT teams emerged early in the Digital Age because the early technologies were primarily back-office and crossed all business units

4. Digital Age technologies have matured and are being built into products and services that are the responsibility of business leaders, not IT

5. IT responsibility for the infrastructure, telecom, info sec, and data is critical

6. CIOs must be certified and held accountable

7. **CIO skills and CEO skills are very different. Career choices, and additional education/experience, required for CIOs to be CEOs (assuming a certified CIO)**