Ohio Association of Community Colleges 2024 Data Summit

Dr. Hernan Londono
Chief Technology and Innovation Strategist
July 7, 2024
By 2025 …

**2025 Jobs Landscape**

**97 MILLION** Emerging roles

1. Data Analysts & Scientists
2. AI & Machine Learning Specialists
3. Big Data Specialists
4. Digital Marketing & Strategy Specialists
5. Process Automation Specialists
6. Business Development Professionals
7. Digital Transformation Specialists
8. Information Security Analysts
9. Software & Applications Developers
10. Internet of Things Specialists

**85 MILLION** Declining roles

1. Data Entry Clerks
2. Administrative & Executive Secretaries
3. Accounting, Bookkeeping & Payroll Clerks
4. Accountants & Auditors
5. Assembly & Factory Workers
6. Business Services & Administration Managers
7. Client Information & Customer Service Workers
8. General & Operations Managers
9. Mechanics & Machinery Repairers
10. Material-Recording & Stock-Keeping Clerks

**Jobs requiring some degree of technology skills**

- **77%**
- **10 YEARS**

- **50%**
- **TODAY**

Source: World Economic Forum, 2020

AI is the New Bacon!
Accelerating Growth in Technology

Source: Technology Matters to Nonprofits: The Impact of Falling Behind the Technology Curve - JMT Consulting
75% of people are already using AI at work

46% of them started using it less than 6 months ago
The New Hiring Imperative
AI aptitude takes center stage.

Leaders say early-in-career talent will get greater responsibilities due to AI.

Leaders are more likely to hire a less experienced candidate with AI skills than a more experienced one without them.

Leaders would not hire someone without AI skills.
There are 800K AI jobs posted in the US currently.
A Turing Test is a test of a machine's ability to exhibit intelligent behavior that is indistinguishable from that of a human.

The test was proposed by Alan Turing in 1950 as a way to evaluate a machine's ability to display human-like intelligence.

The test involves a human evaluator who interacts with a machine and a human via a text-based interface, without knowing which is which.

The machine passes the test if the evaluator cannot consistently distinguish the machine's responses from those of the human.
What is Prompt Engineering?

Prompt engineering refers to the process of designing and refining prompts that are used to generate responses from artificial intelligence language models. It involves selecting specific prompts that are likely to elicit the desired response from the language model. The goal of prompt engineering is to improve the quality and relevance of the language model's responses to a given task or application.
Impact Is Driven by People, Not Technology

Impact of Technology Change
- Cloud
- Internet of Things
- Omnichannel
- Big Data and Analytics
- AI

Impact of People Change
- Competencies, Culture and Mindsets
- Business Model and Strategy
- Ways of Working
- Corporate Clock Speed and Governance
- Leadership and Change Management
- Customer Experience
- IT’s Operating Model
- Incentives, Prioritization and Funding Model
- Compliance and Risk Management

1X
- Changing siloed mindsets and culture
- Encouraging employees to work iteratively, collaboratively and efficiently
- Coping with ambiguity, interdependencies
- Learning to think about the end customer’s journey

15X
- Developing a shared ambition and vision for digital
- Making faster and better decisions
- Reorienting IT teams to partner closely on digital business outcomes
- Making digital part of behavior - driving metrics and goals
- Overcoming aversion to risk and failure

Source: CEB Analysts, Gartner 2018
Impact Is Driven by People, Not Technology

- Impact of Technology Change
  - Cloud
  - AI
  - Big Data and Analytics
  - Omnichannel

- Impact of People Change
  - Competencies, Culture and Mindsets
  - Ways of Working
  - Corporate Clock Speed and Governance
  - Business Model and Strategy
  - Leadership and Change Management
  - IT's Operating Model
  - Customer Experience
  - Incentives, Prioritization and Funding Model
  - Compliance and Risk Management

- Developing a shared ambition and vision for digital
- Making faster and better decisions
- Reorienting IT teams to partner closely on digital business outcomes
- Making digital part of behavior-driving metrics and goals
- Overcoming aversion to risk and failure

Source: CEB Analysts, Gartner 2018
“Culture eats strategy for breakfast”

- Drucker
It Is A Matter Of Choice…
(Or Maybe Not)
The “Dream Killers”

All you’ve done is chisel all day! Do something useful, like helping your brother drag those rocks up the hill.
The Overly Optimistic… (Lazy?)

“What if we don’t change at all... and something magical just happens?”
EXHIBIT 3
Health Care Spending as a Percentage of GDP, 1980–2019

Notes: Current expenditures on health. Based on System of Health Accounts methodology, with some differences between country methodologies. GDP refers to gross domestic product.
* 2019 data are provisional or estimated for Australia, Canada, and New Zealand.
Data: OECD Health Data, July 2021.

According to the College Board, the average cost of tuition and fees at a **four-year public university** for in-state students increased by **156%** between 1989 and 2022. The average cost of tuition and fees at a **four-year private university** for in-state students increased by **300%** during the same period.
**2024 EDUCAUSE Top 10 Institutional Resilience**

1. Cybersecurity as a Core Competency
2. Driving to Better Decisions
3. The Engagement Crisis
4. Diving Deep into Data
5. Administrative Cost Reduction
6. Meeting Students Where They Are
7. Financial Key to the Future
8. Balancing Budgets
9. Adapting to the Future

**2023 Top 10 IT Issues: Foundation Models**

- Leading with Wisdom
- The Ultra-Intelligent Institution
- Everything Is Anywhere
- The Sustainable Business Model

**TOP 10 IT ISSUES, 2022**

- Shared Vision, Shared Strategy
- Student Success as Institutional Success
- The Digital Faculty for a Digital Future
- The Cyber Everywhere: Are We Prepared?
- The Shifting World of Higher Education or an Expansive Opportunity?
## 2017-2023 Strategic Priorities

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Model</th>
<th>Institutional Leadership</th>
<th>Cybersecurity</th>
<th>Operational Efficiency</th>
<th>IT Modernization</th>
<th>Talent Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td>Cybersecurity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td>Cybersecurity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td></td>
<td>Cybersecurity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
<td></td>
<td>Cybersecurity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td></td>
<td>Cybersecurity</td>
<td></td>
<td></td>
<td>Institutional Leadership</td>
</tr>
<tr>
<td>2022</td>
<td></td>
<td></td>
<td>Cybersecurity</td>
<td></td>
<td></td>
<td>Institutional Leadership</td>
</tr>
<tr>
<td>2023</td>
<td></td>
<td></td>
<td>Cybersecurity</td>
<td></td>
<td></td>
<td>Institutional Leadership</td>
</tr>
</tbody>
</table>

**Key Moments:**
- **2020**: Peak of Pandemic
- **2021**: Post-Pandemic Recovery
- **2022**: Accelerated Change
- **2023**: Long-term Strategy
AI Fueled World

Agriculture
Achieve higher yields & increase efficiency

Energy
Maximize production and uptime

Education
?

Government
Enhance safety, research, and more

Finance
Turn data into valuable intelligence

Health
Revolutionize patient outcomes

Industrial
Empower truly intelligent Industry 4.0

Media
Create thrilling experiences

Retail
Transform stores and inventory

Smart Home
Enable homes that see, hear, and respond

Telecom
Drive network and operational efficiency

Transport
Automated driving

How should AI impact Education?
Is AI a right fit for my institution?

Is my data good enough for AI creation?

Can AI perform better than my current processes?

Will end users use and get benefit from AI?
Higher Ed Has Yet to Hear the Alarm Bells

Adoption of an Enterprise-Wide Digital Strategy

Institutions by Industry (%)

- Advertising: 52%
- Media: 49%
- Technology: 48%
- Government: 40%
- Pharmaceuticals: 37%
- Professional Services: 37%
- Financial Services: 37%
- Global Average: 35%
- Healthcare: 32%
- Retail: 28%
- Nonprofit: 27%
- Energy: 26%
- Engineering: 22%
- Manufacturing: 20%
- Education: 18%

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
<th>ITF Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital spending</td>
<td>4</td>
<td>Relatively High Spend on IT; But Low Assets</td>
</tr>
<tr>
<td>Digital asset stock</td>
<td>2</td>
<td>Low Share of Assets that are Digital</td>
</tr>
<tr>
<td>Transactions</td>
<td>2</td>
<td>Less emphasis on digitalized payments in education</td>
</tr>
<tr>
<td>Interactions</td>
<td>4</td>
<td>Strong score in digital interactions with supplier-customer</td>
</tr>
<tr>
<td>Business processes</td>
<td>1</td>
<td>Poor digitalization of internal and customer facing processes</td>
</tr>
<tr>
<td>Market making</td>
<td>1</td>
<td>No usage of Digital Platforms to make markets</td>
</tr>
<tr>
<td>Digital spending on workers</td>
<td>3</td>
<td>IT operating expense per person/student in line</td>
</tr>
<tr>
<td>Digital capital deepening</td>
<td>3</td>
<td>Computers per person/student matches other industries</td>
</tr>
<tr>
<td>Digitization of work</td>
<td>3</td>
<td>In Higher Ed, this approaches 100</td>
</tr>
</tbody>
</table>

Source: James Manyika et al, “Digital America: A tale of the have-s”
Enrollment

Student Success
Enrollment

Customer Engagement

Recruitment

Admissions
Prediction VS. Institutional Impact

Any AI can show you predictions

“Which students are likely to apply?”

“How likely are students to drop out?”

“What is the likelihood that an alum will open this fundraising email?”

To get business impact you need to also answer

“If the faculty are only willing to call 500 students, which students should they call to increase overall enrollment?”

“What is the best form of outreach that would convince this specific student to apply? (e.g. invite to visit campus vs. a local alumni event)”

“What is the best form of outreach that would convince this specific alum to engage? (e.g. text message, email, mail-in)”