

A Call to Action

Education, the Future of Work, and how standards support the vital work ahead for education

PESC-A4L Summit May 1, 2024

The future of work in America: Key facts

What changed emerging from the pandemic



~2x

the number of job openings as there are unemployed people



8.6M

occupational shifts from 2019 to 2022, 50% higher than last 3 years



1/2

of Americans think higher education is not affordable



1 in 700

number of hires in 2023 where the promise of Skills-Based Hiring was borne out



30%

of time spent on tasks in the US economy could be enabled by automation (9% acceleration by GenAI) by 2030



12M

additional occupational transitions could happen by 2030: Healthcare, STEM, to add jobs, while customer service, office support declines

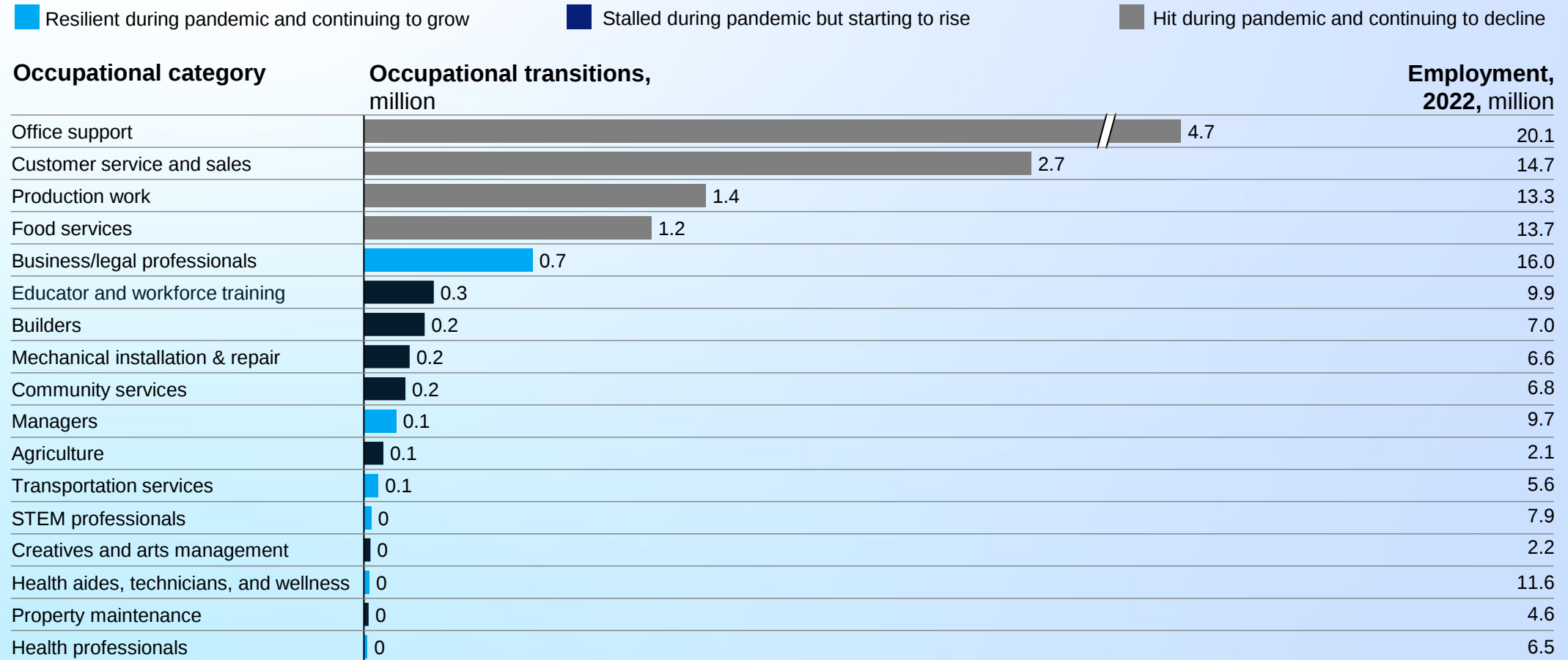


>80%

of occupational transitions could occur among workers in customer service, production, and office support roles

Twelve million occupational transitions will be required by 2030

Estimated number of occupational transitions by category, 2022–30, midpoint automation scenario, with generative AI acceleration



Total = 11.8M

Workers in lower-wage jobs, those with less educational attainment, women, and people of color are more likely to transition



Workers in lower-wage jobs

14x

More likely to be affected than high wage workers



Women

1.5x

More likely to be affected than men



Workers in jobs that require less education

1.7x

More likely to be affected than those with bachelor's or above



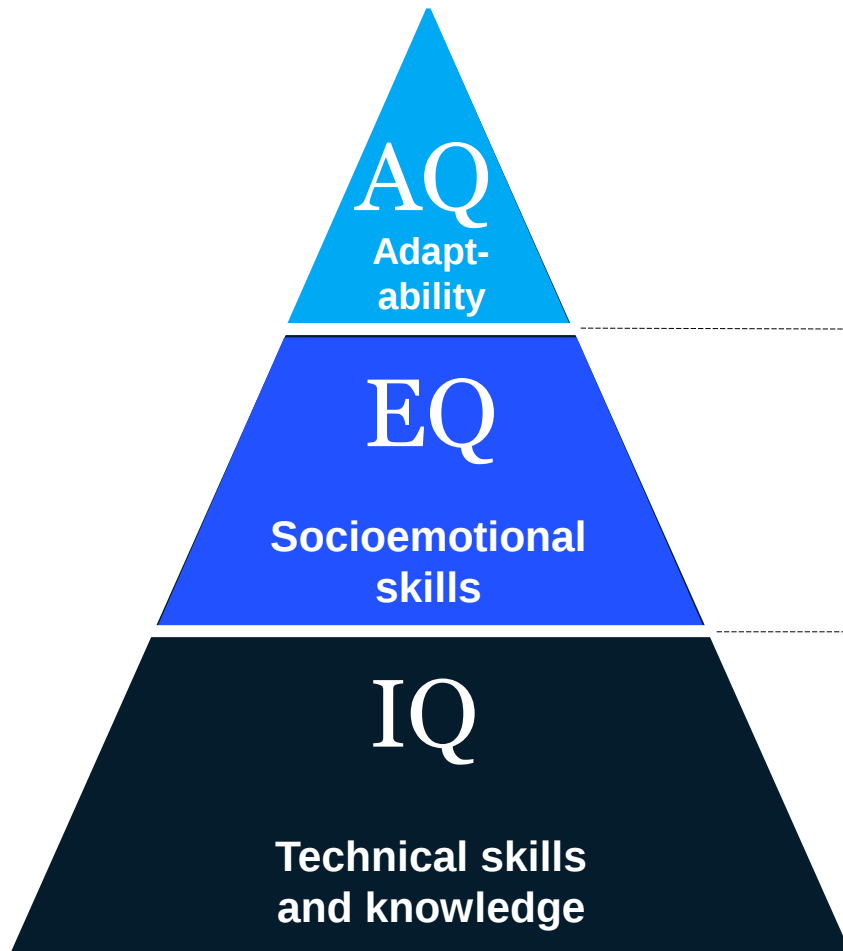
People of color

1.1x

More likely workers to be affected than White workers



Adaptability and lifelong learning are increasingly critical



Changes in demand driven by AI

Increasingly critical

Demand will increase as machines do knowledge-work

Specific skills will change several times within a career (including AI fluency)

Examples of next generations skills

- ▶ Lifelong learning aspiration/growth mindset
- ▶ Self-direction
- ▶ Comfort with change, uncertainty

- ▶ Creativity
- ▶ Critical thinking and problem solving
- ▶ Social intelligence
- ▶ Communication and influence

- ▶ Design
- ▶ Product management
- ▶ Big data analytics
- ▶ Agile methodologies
- ▶ Lean management practices

Recent Case Studies

Technical College System Online Campus to Leverage Specialized Faculty

Context

A state-wide technical college system with over 20 colleges, 345,000 students, and 12,000 faculty and employees built an online campus to allow students to access courses across the entire system in an online format.

In 2021, the technical college system implemented information systems to cross-list impactful courses across all colleges, integrate learning management systems, and implement improved customer relationship management, enrollment, reporting, and advising services to support the system-wide online campus.

Approach

Web Services – Developed web applications and web services to integrate the central online campus learning management system with all college student information systems.

Cloud-Based Data Warehouse – Designed a new cloud-native reporting database replication strategy and data warehouse architecture, provisioned cloud infrastructure, and worked with the client to implement their desired ETL and reports.

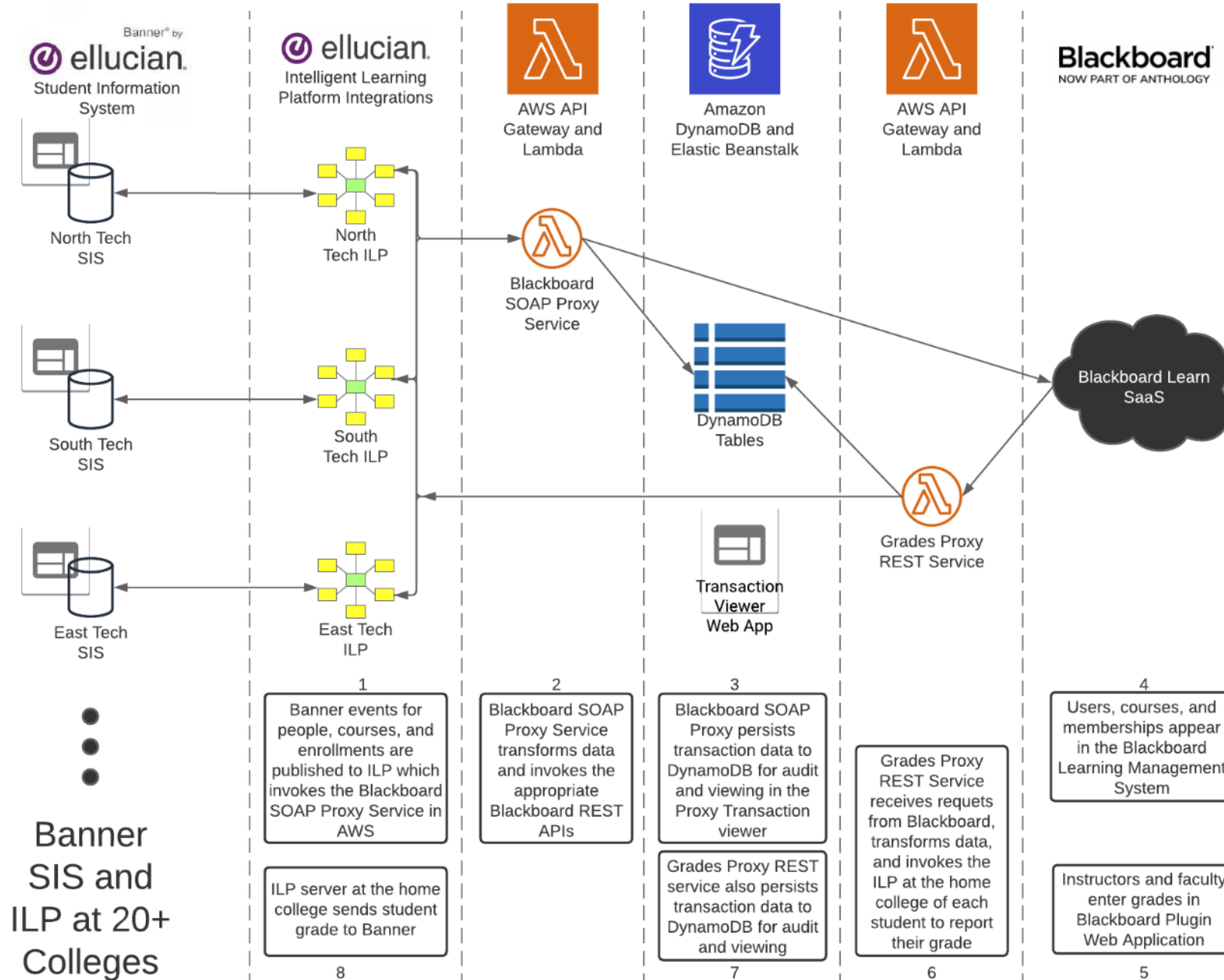
Impact

- Specialized faculty retained by one college can serve students at all colleges
- In 2023 272 courses cross-listed with 3,679 student enrollments in online campus courses
- 3% annual increases in enrollment in 2023
- Accelerate time to complete programs with improved course availability

Technical College System Challenges

- The vended interoperability solutions to integrate SIS and LMS systems only worked for one college SIS to one college LMS and not from 20+ college SIS systems to one, central system-wide LMS
- The standards used by the vended integration solutions identified students by student ID only and not institution and student ID or some other more global way
- The vended solutions available were built on older SOAP standards for student data interchange that were challenging to re-implement and leverage from contemporary cloud platforms
- Triggering and filtering SIS system events for the right students, faculty, courses, and enrollments was challenging

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University System Recruiting and Learning Platform to Re-engage Stop Outs

Situation

- A non-profit edtech startup building a recruiting and online learning platform to re-engage stop outs to complete programs that advance their careers such as RN to BSN.
- Guiding principles of the program are:
 - Unified User Experience
 - Create a frictionless experience for applicants, student, faculty, advisors and other staff
 - Provide a seamless onboarding experience for each institutions in the system through an integrated ecosystem.

Approach

- Implement marketing and recruiting platforms and integrate them with a system-wide data platform
- Integrate a central applicant portal and with the 15+ student information systems across the system
- Develop an integration strategy between the central data platform and the student information systems across the 15+ campuses
- Implement a CRM for users of the platform and integrate it with the central data platform
- Implement a central LMS for the program and integrate it with the student information systems and central data platform

Impact

Enabled on-boarding of the first Higher Ed institution in the system to the platform

Created the strategy and Implementation roadmap for IHE SIS integration with the data platform

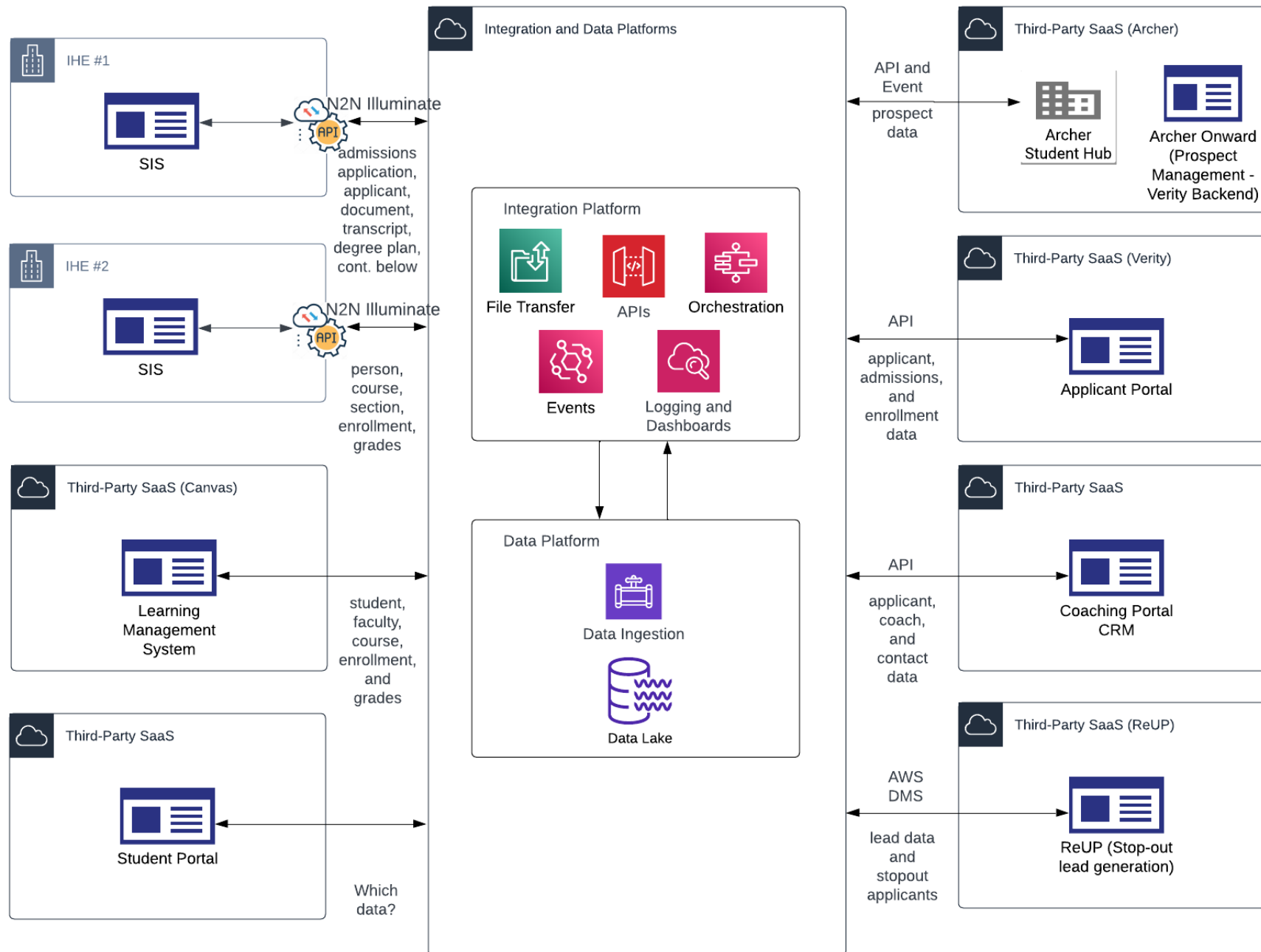
Designed and developed the central data lake environment

GTM launch with one institution in the system

University System Challenges

- The team could not find standards or solutions that addressed integrating lead data from martech services into the central data platform
- Admissions portal they selected for features and flexibility did not use any existing admissions application interchange standards
- The university system used Banner at some campuses and PeopleSoft at others (and different versions of each) resulting in the need to map applicant and admissions data to multiple proprietary data models
- The institution could not manage this SIS integration complexity and hired a vendor to provide a common model for applicant and student data

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State Workforce Development Program Integration Hubs for Technical Colleges and Employers

Situation

- A state workforce development program wanted to integrate technical college systems and employers with its citizen-facing portal, agency staff portal, and analytics platform to:
 - Identify high-value career paths
 - Match talent and skills of users in the citizen portal with available positions across the state
 - Present citizens with best options for training in their area for high-value career paths

Approach

- Identify highest impact employer and talent platforms for the state's citizen (i.e. LinkedIn, GoGig, etc.)
- Engage a system integrator and or integration platform-as-a-service provider to build data pipelines and integrations to integrate these platforms with the workforce development and re-employment portal
- Ingest supporting training, location, schedule, and registration data from all colleges in the technical college system

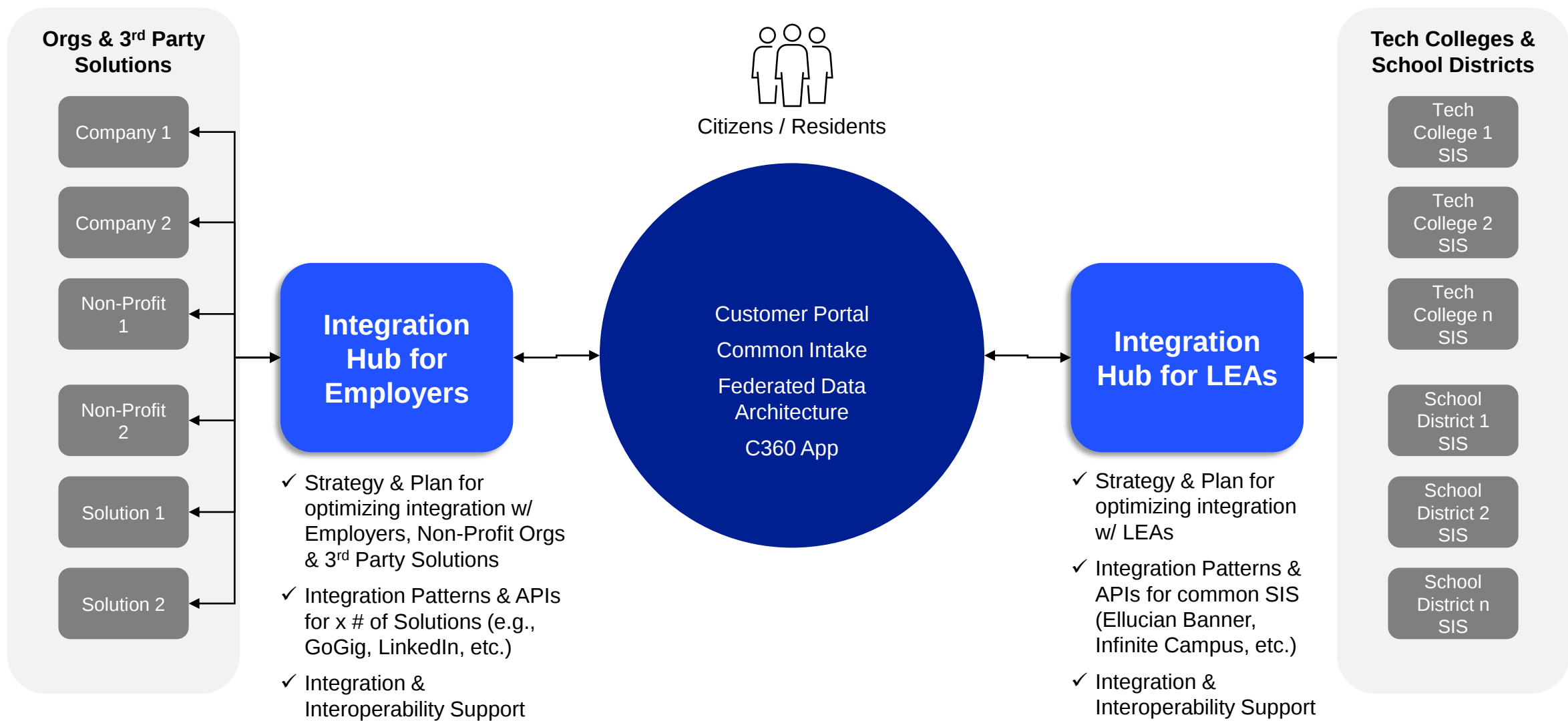
Impact

TBD

State Workforce Development Portal Challenges

- Job boards and employment/business social media platforms almost exclusively integrated with APIs that align to their internal data models and logic
- Retrieving course catalog data from disparate SIS systems and data warehouse systems and modeling that uniformly in a useful way for analytics and AI applications is complex
- Workforce development board data with information on high-demand for jobs by region is maintained locally in a variety of formats with only a subset of fields and summaries available in a state-wide report format

A holistic ecosystem of future-proof innovation and sustainability



Closing Thoughts

- Many integrators from educational institutions and state governments see data and integration standards as a point of leverage
- Edtech companies and SIs historically saw standards as a way to improve the capabilities and utility of their products and services, but this may be changing given pressure to innovate
- Many innovative implementers spend little to no time thinking about how to leverage or deploy standards
- Bringing these folks together regularly to discuss the use cases they are implementing, how a united standard supports those cases, what capabilities the standard unlocks, and where there are gaps could be very productive