Unlock your digital information. Unleash *their* potential.

PESC Fall 2018 Data Summit

Enabling Next Generation Education Infrastructure

Dale Allen, PhD - President and Co-Founder

October 18, 2018

Understanding the Business of Higher Ed

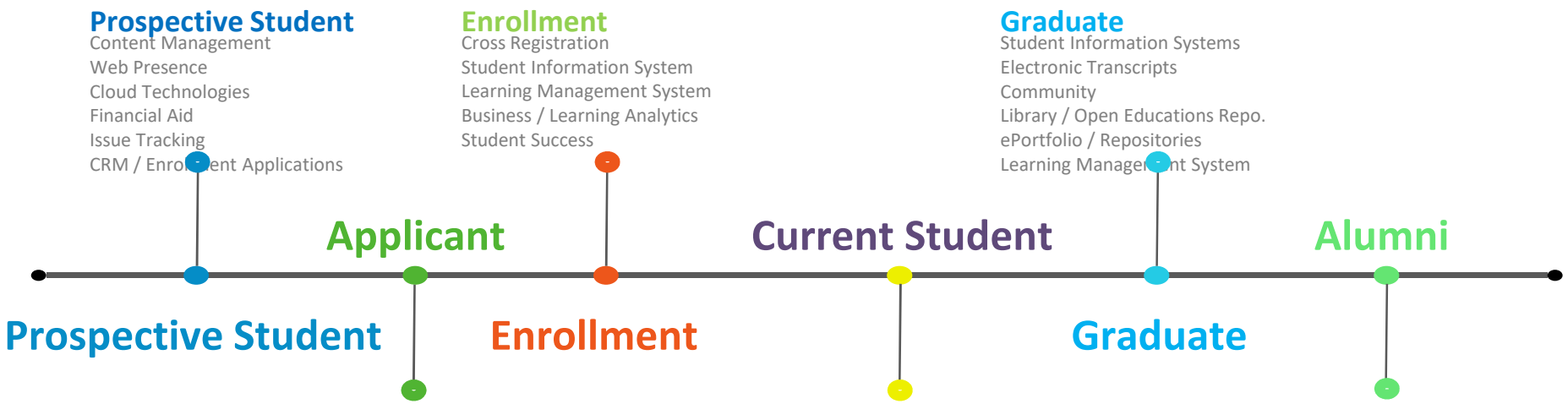
87%

Customized

50%

Before modern technology

SUNY Student EcoSystem



Applicant
Payment Processing
Web Presence
Content Management
CRM / Enrollment Applications
Electronic Transcripts
Financial Aid
Student Information System

Current Student
Student Information System
Learning Management System
Student Success / Engagement
Learning / Business Analytics
Web Conferencing
Community / ePortfolio
Library Services Platform
Open Repositories (OA, OER, Data)

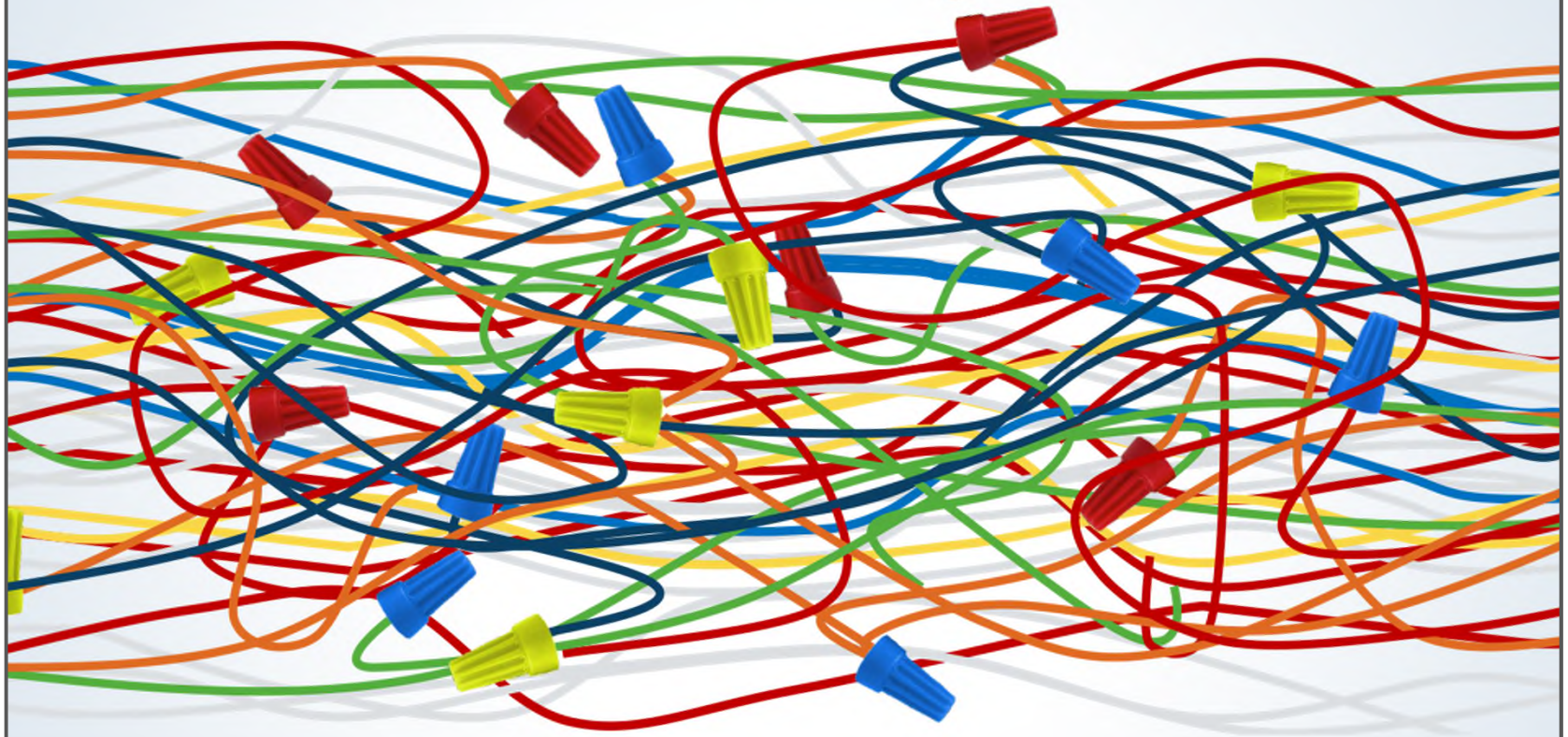
Alumni
Electronic Transcripts
Community
Library / Open Educations Repo.
ePortfolio
Repositories

Student Information System	Open Educational Repositories	Issue Tracking
Repositories	Content Management	Electronic Transcripts

Creating the Environment for the Next Generation of Student Success

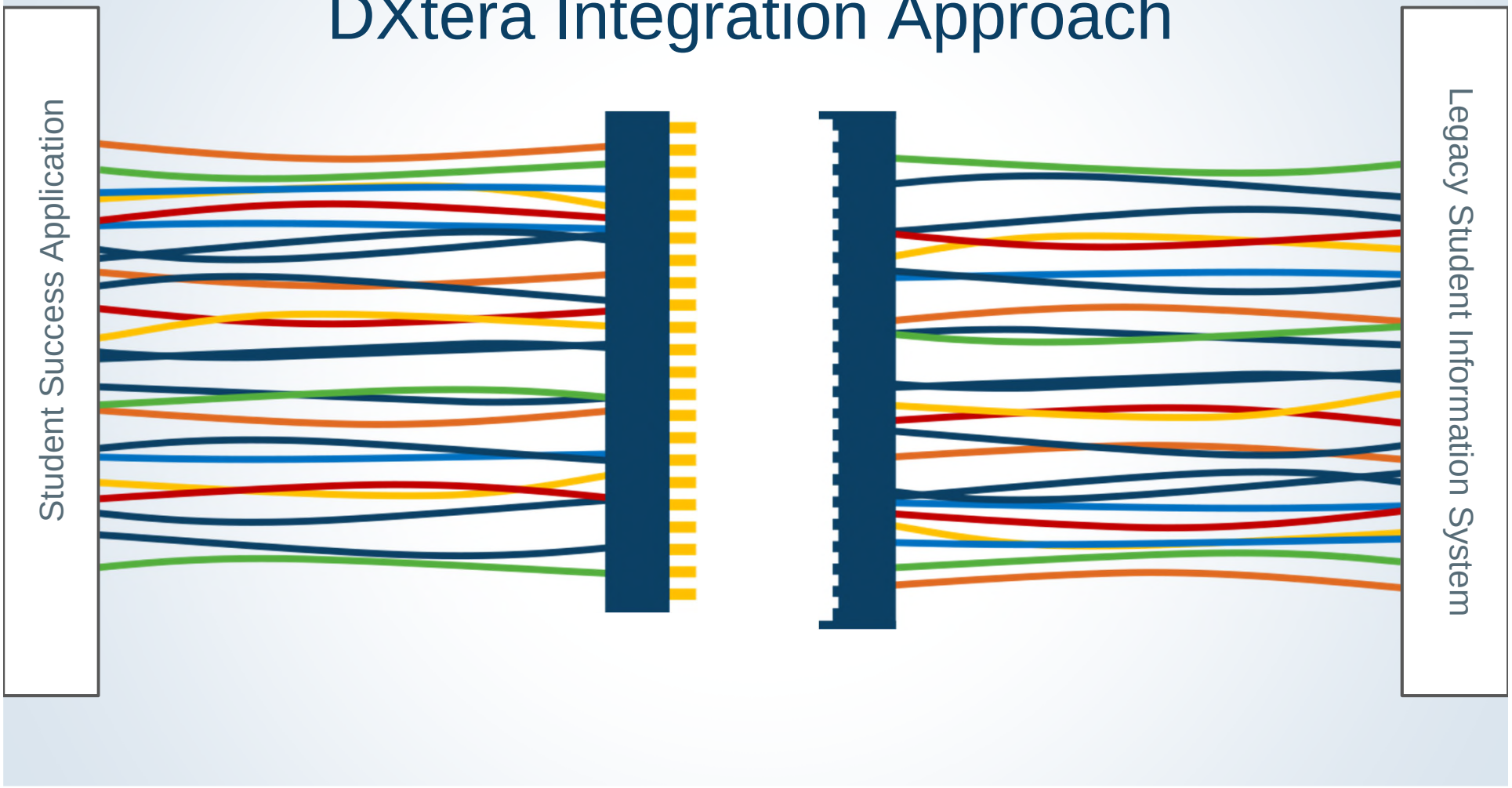
Point-to-Point Integration

Student Success Application



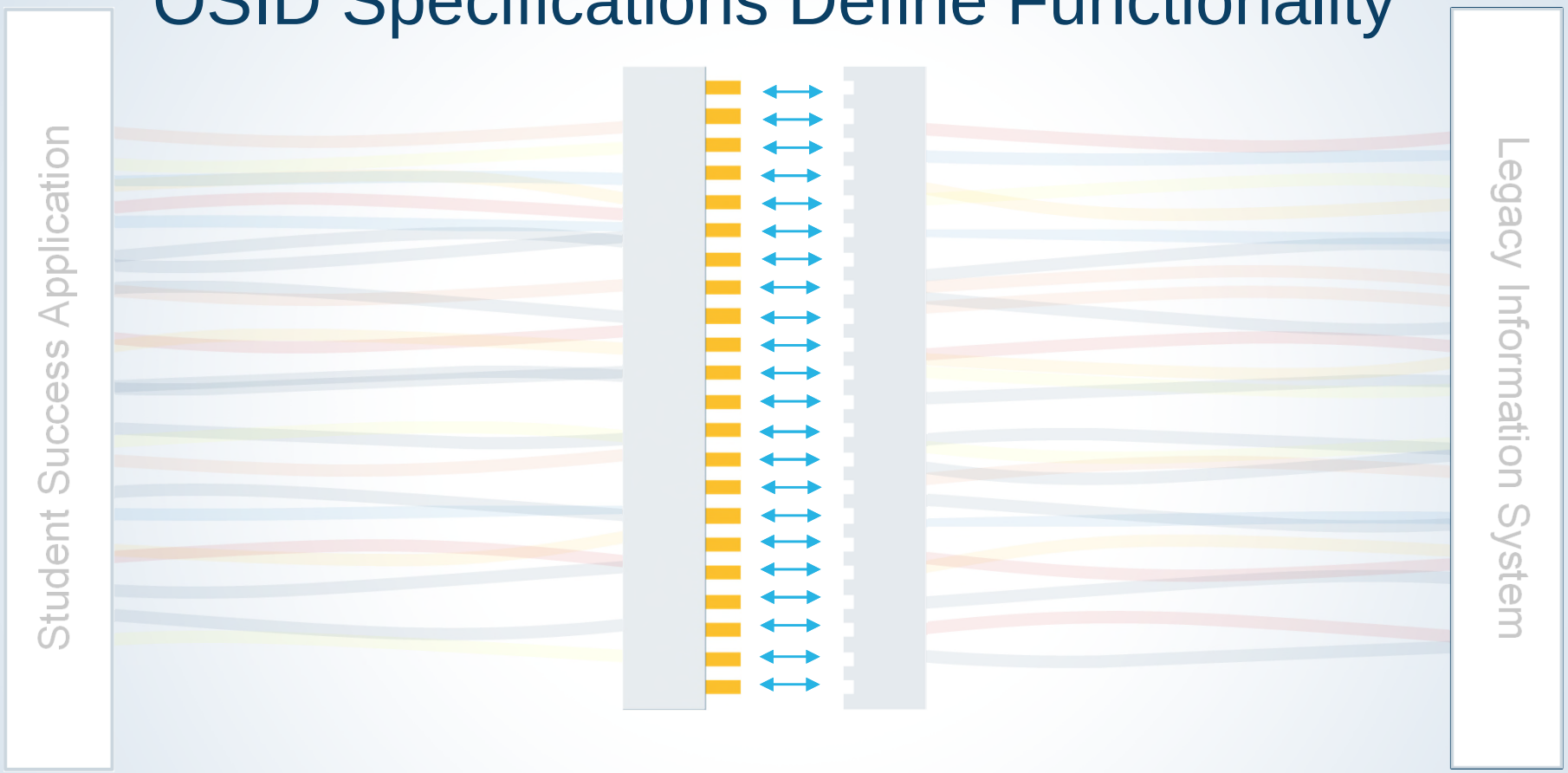
Legacy Student Information System

DXtera Integration Approach



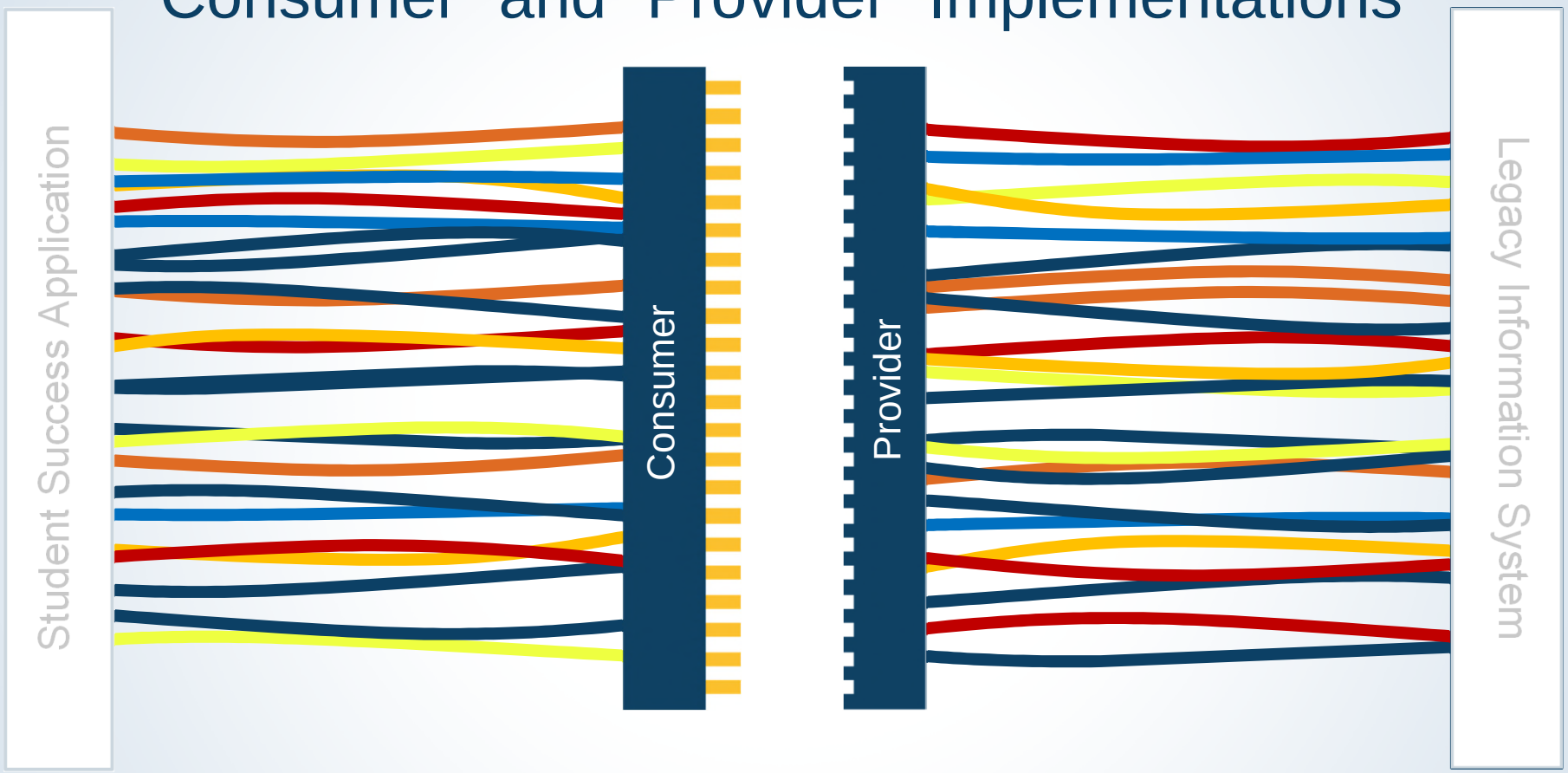
DXtera Integration Approach

OSID Specifications Define Functionality

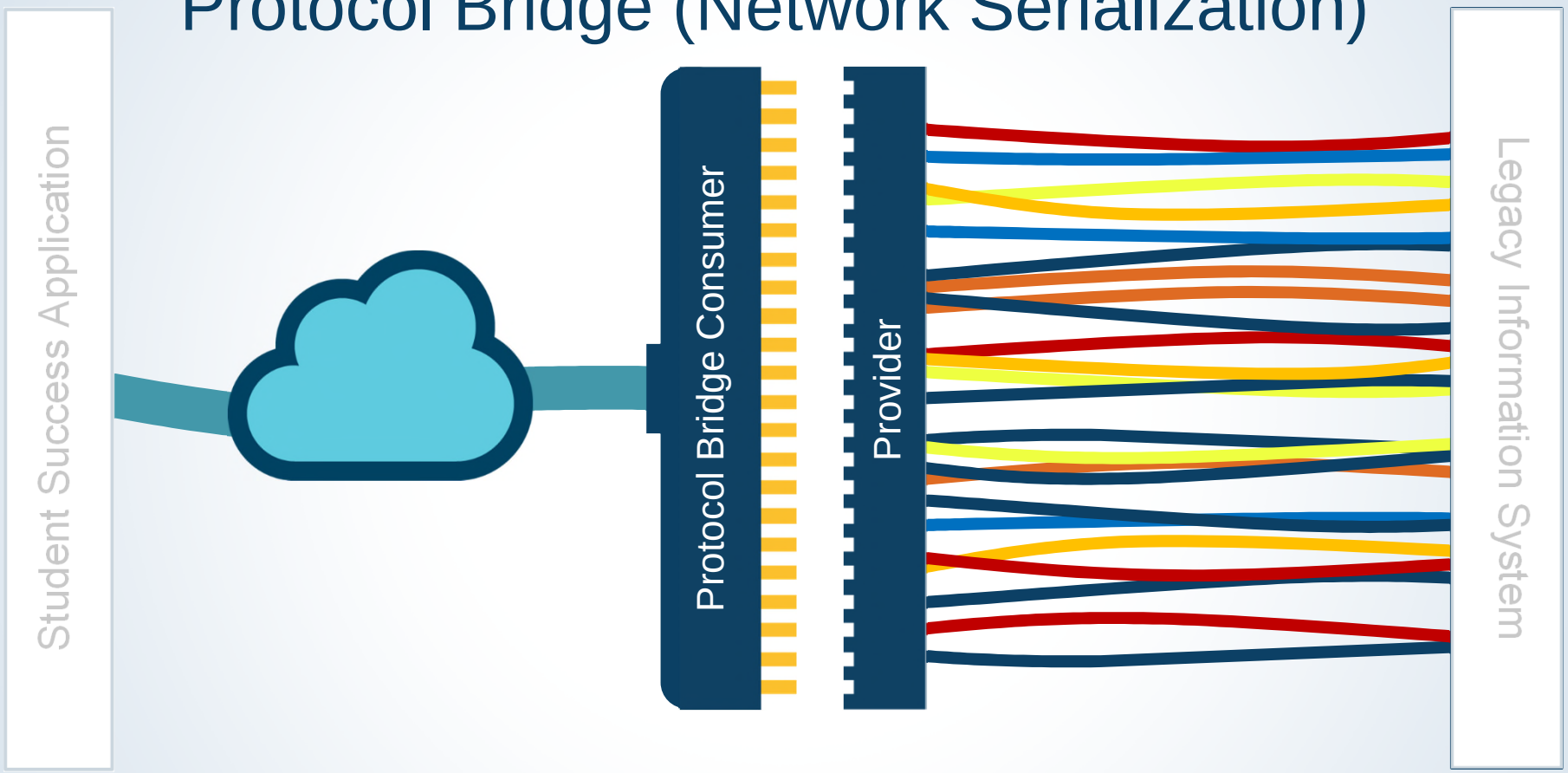


We've Defined Thousands of Connectors

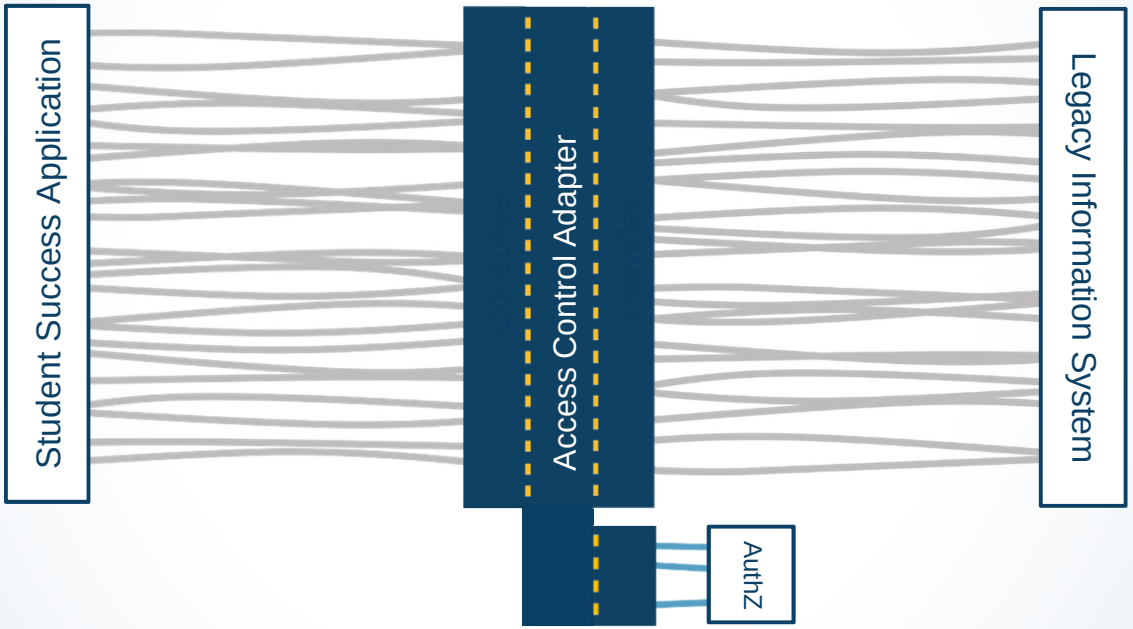
“Consumer” and “Provider” Implementations



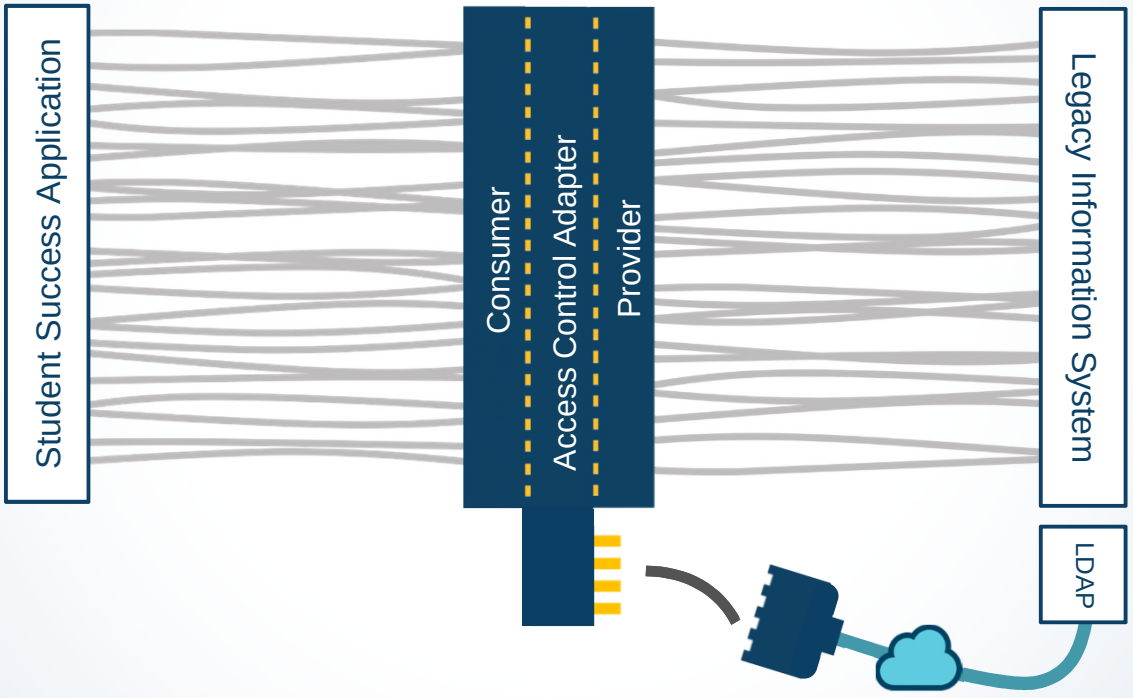
Protocol Bridge (Network Serialization)



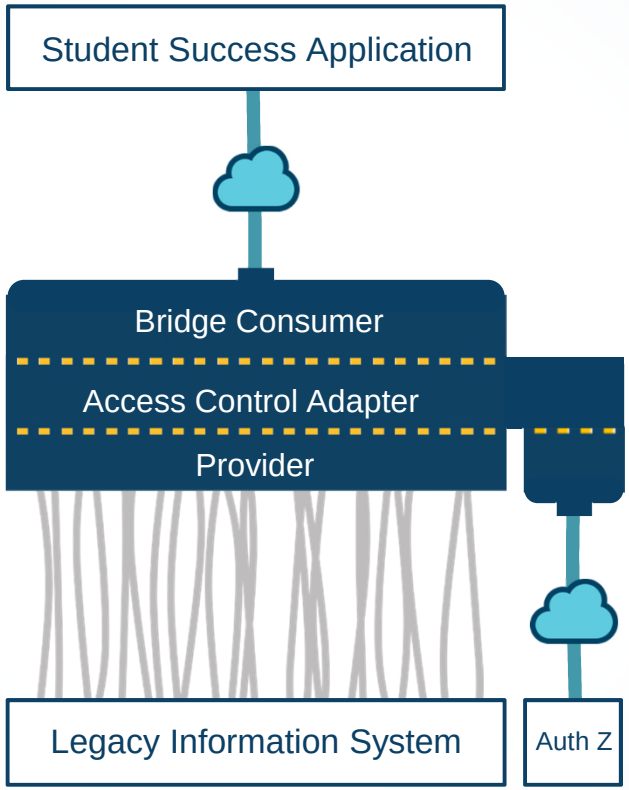
Example: Access Control Adapter



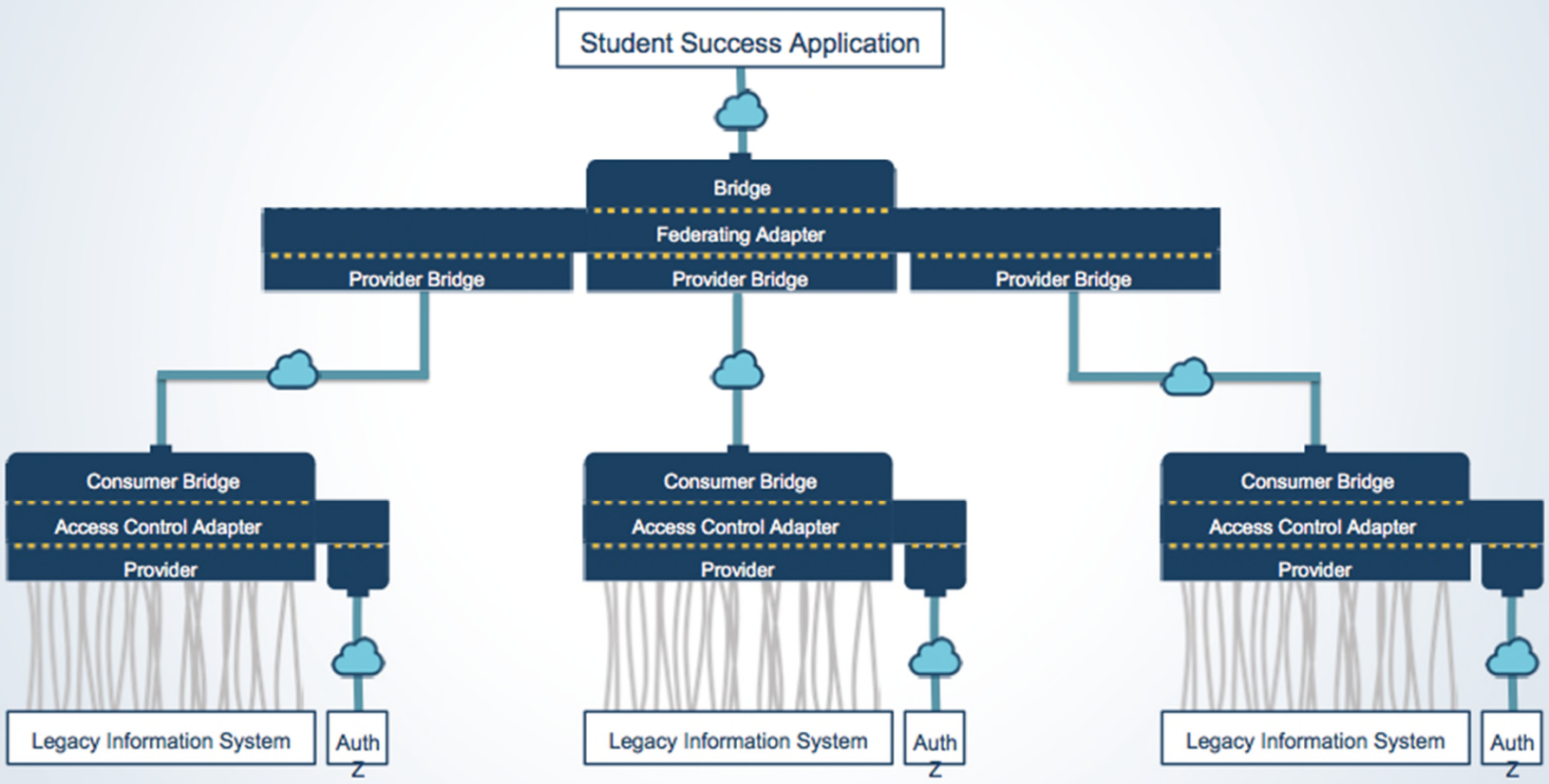
Swappable


Student Success Application
Consumer
Access Control Adapter
Provider
Legacy Information System
LDAP

Security and Access Control



Federation


Student Success Application
Bridge
Federating Adapter
Provider Bridge
Provider Bridge
Provider Bridge
Consumer Bridge
Access Control Adapter
Provider
Legacy Information System
Auth Z
Consumer Bridge
Access Control Adapter
Provider
Legacy Information System
Auth Z
Consumer Bridge
Access Control Adapter
Provider
Legacy Information System
Auth Z

Collaboration

Control

Student Success

Members and Partners

Strada
EDUCATION NETWORK
United to Strengthen America's Pathways Between Education and Employment
Mission-Aligned Affiliates
College Confidential
CAEL
Linking Learning and Work
DYTERA INSTITUTE
EDUCATION WORK
Emsi
insidetrack
ROADTRIP NATION

Technical Assistance

Education & Training

Technology Development

MEMBER-DRIVEN PROJECTS

Member-Driven Technology Projects

- Operational Data Store
- Data Warehouse
- Next Gen Integration Scorecard
- Member Product Integrations
- NG Learning and Assessment
- Data Trust Integration
- Consumption for Credential Engine

GPS Strategies Represent Levers

Pathway Relevance

- **Purpose First**
- **Math Pathways**
- **Guided Pathways**

Emsi

- All students access Career Coach technology in advising process for purpose-driven decision-making
- Math pathways in place at most Colleges, with co-requisites designed from them
- All programs of study mapped, semester-by-semester
- Transferable first-semester success courses for all

Pathway Intentionality

- **Structured Schedules**

EAB

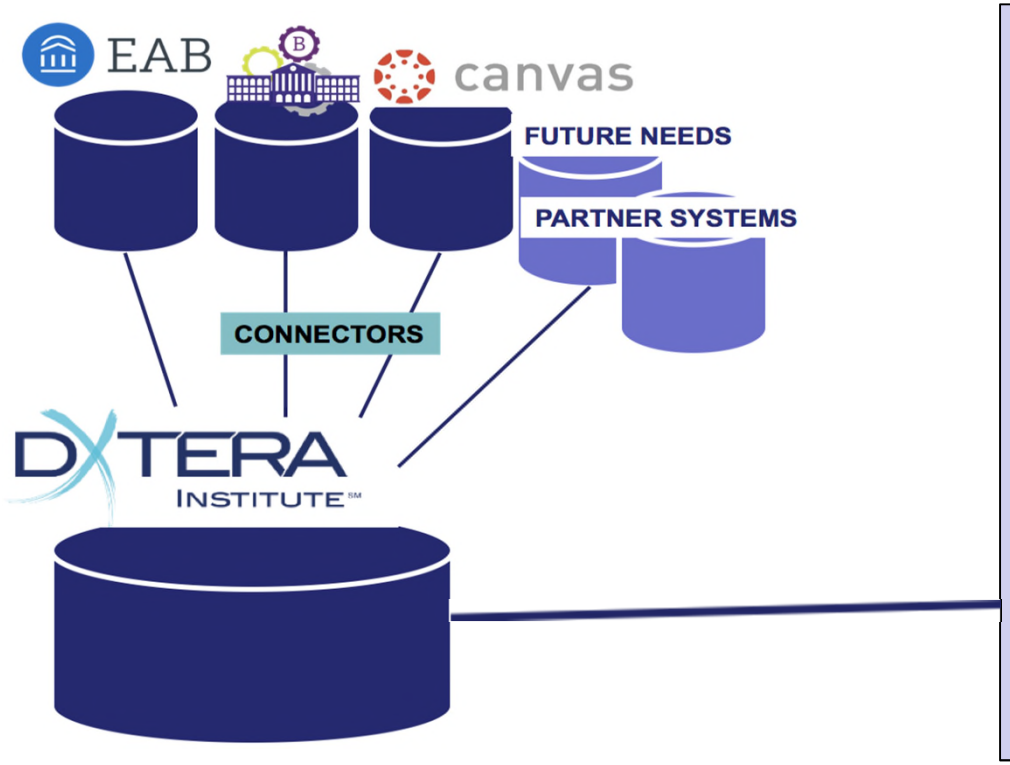
- Seven common focus areas, including with K-12
- Introducing technology to all Colleges to ensure all students register onto semester-by-semester plans
- Enabling predictive and block scheduling
- Enabling measures around plan quality

Pathway Pace

- ***Co-requisites***
- 15 to FINISH

- Co-requisites impact majority of students by Fall 2018
- 15/30 credits the new normal for full-time

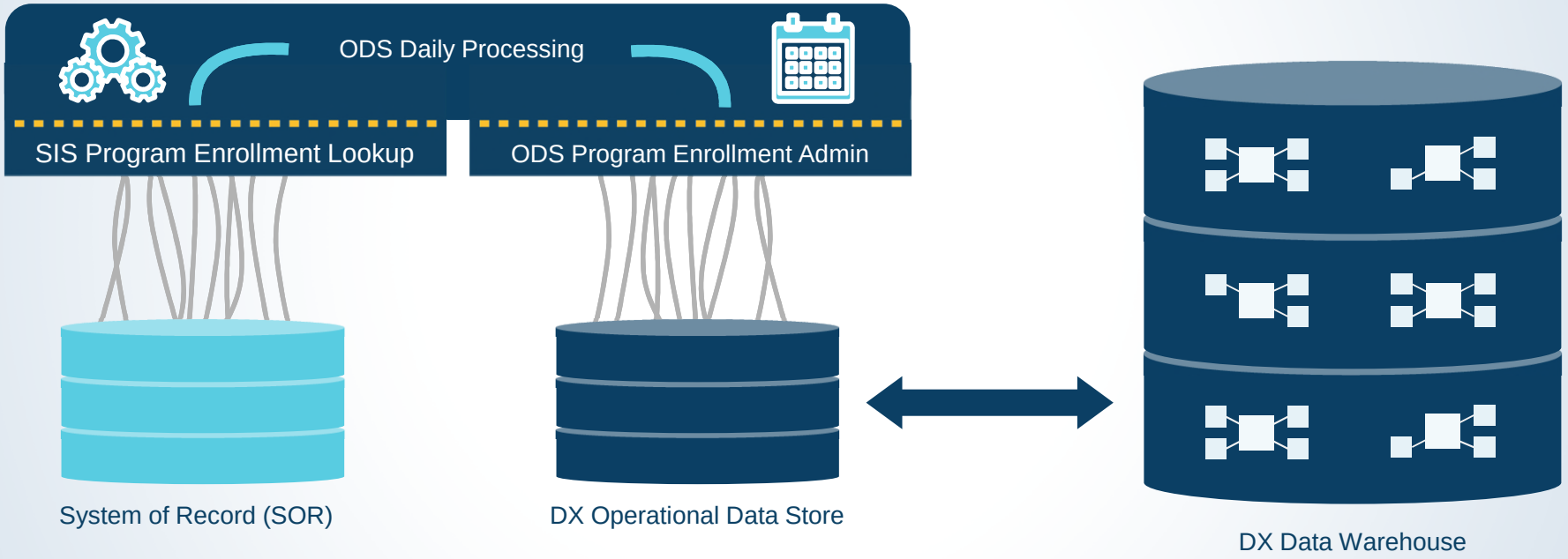
Where we are going with DXtera Integration Approach



- Enables dashboard reporting from myriad tools, including Tableau, Rapid Insight, and Excel
- By bringing together all student-facing systems, can allow for real-time analyses to unearth risk factors and spark rapid student interventions
- New systems needs plug-in through connector-based intergration framework
- Data stability and speed through star-schema-based warehouse design
- Ability to federate with external systems

DX ODS and Data Warehouse

Designed to answer questions critical to student success



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Project #1: The New LMS

How can we provide support for new learning and teaching methodologies?

How can the LMS communicate with the Academic Management System?

Should we have to evolve our campus or use a commercial one?

Project #2: Datamart

Research in eLearn Centre moving to have an evidence-based translational research model.

Is it possible to create a data model where tools can be interoperable between different universities?

Project #3: Competencies

How can competencies be evaluated as learning objectives?

Can we visualize a degree from a competencies point-of-view?

Is it possible to have this information in common with other universities?

Project #4: Cognitive technologies

Universitat Oberta de Catalunya

Are chatbots an efficient tool of communication?

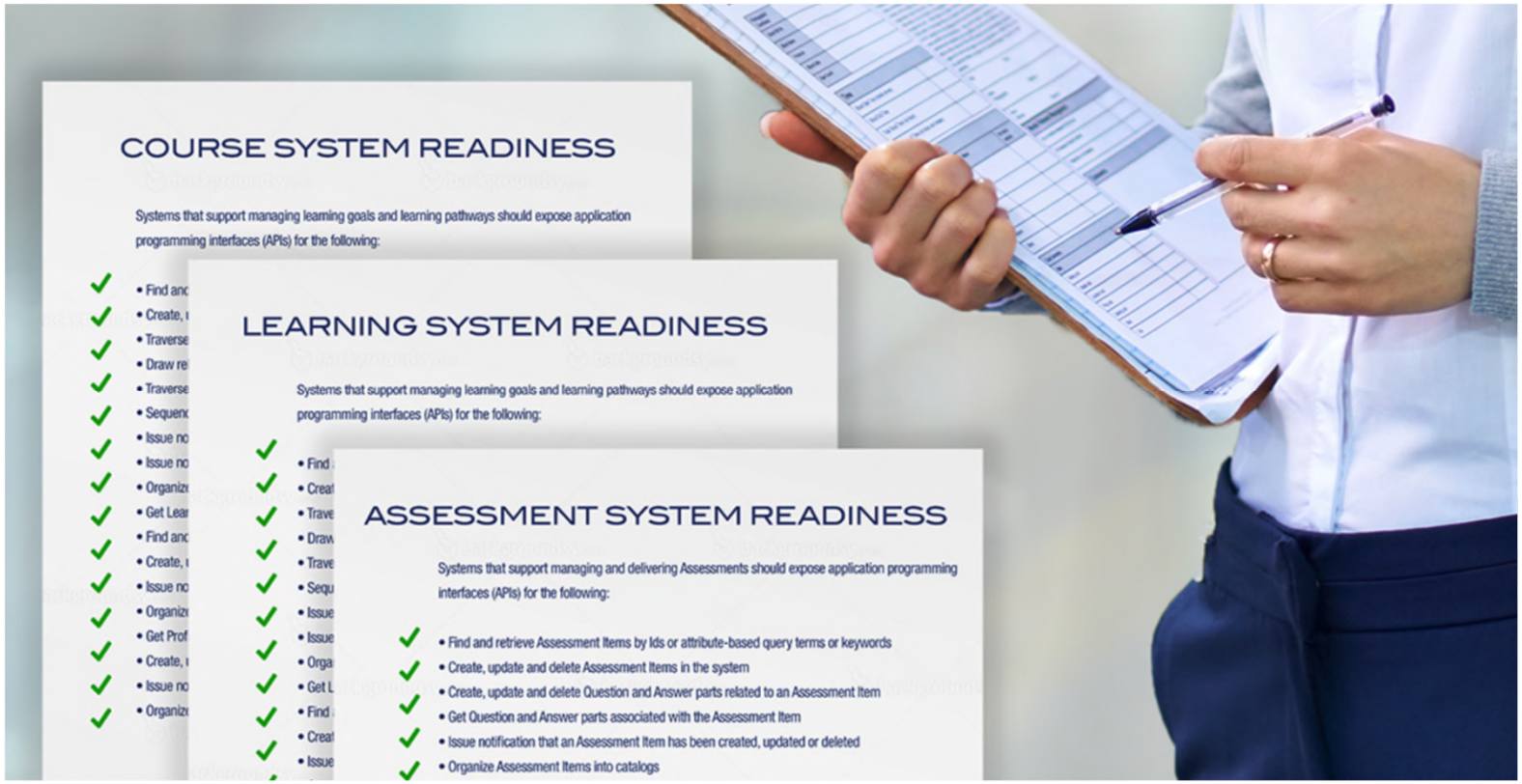
How communication via chat would change the LMS?

Can tutors be replaced by Intelligent Tutoring Systems?

NG research projects

IBM Watson

Next Gen Integration Scorecard



Emerging Affiliates and Technology Projects

NEXT GENERATION BY DESIGN

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UOC Universitat Oberta de Catalunya

BÜNDNIS FÜR BILDUNG

MindCet

Strada EDUCATION NETWORK

Vision

- Shift the Market to enable Plug and Play - Choice-Based
- Targeted collaboration
- Specific problems -> market relevant solutions
- Knowledge transfer
- Global network
- Development and Deployment

Projects to Propel Smart Demand

1. Next Gen Integration Scorecard

1. Learner Owned Record

1. Student Data Mobility

1. Degree Requirements

1. Emerging Projects - DXtera Lab (Sandbox)

Thought Leadership: NGBD Series Schedule

- Israel EdTech Week - Tel Aviv, Israel - September 5, 2018
- EDUCAUSE - Denver, USA - October 30, 2018
- Learntec - Berlin, Germany - January 29 - 31, 2019
- UNESCO Mobile Learning Week - Paris, France - March 3 - 5, 2019
- ASU + GSV - San Diego, USA - April 6 - 8, 2019
- Next Generation By Design Symposium - Barcelona, Spain - May 21-23, 2019 - INVITE ONLY

U.S. Department of Education Challenge

EdRec: Next Gen By Design

Dale Allen, PhD
President and Co-Founder, DXtera Institute

EdRec Team

NEXT GENERATION BY DESIGN

BrightHive

A public benefit corporation that provides services and technology that enable public-private data collaboratives and support multi-stakeholder data ecosystems.

brighthive

Concentric Sky

An award-winning software development firm with a 13 year track record of delivering innovative software solutions to complex problems. Core contributors to a number of open standards at standards bodies including W3C, IEEE, and IMS Global. Makers of Badgr.

CONCENTRIC SKY

DXtera Institute

A growing international, nonprofit, member-based consortium of higher education professionals collaborating to remove technology barriers so that institution leaders, faculty, staff and students have efficient access to information needed to transform student outcomes.

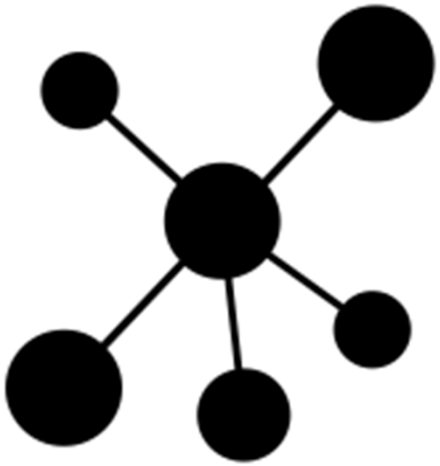
DXTERA INSTITUTE

Vision for a NGBD Environment

- Decentralized, real-time standards-based data infrastructure
- Combination of micro-credentials, competency frameworks, learning pathways, and blockchains
- Connections between education records, competency development systems, and employment opportunities
- Open solutions & standards community
- Vendor agnostic

EdRec Ecosystem Benefits

- Enabling the student-controlled exchange of digital information
- Facilitating personalized learning, pathway planning, and employment without integration barriers
- Supporting exchange between learning environments, business intelligence and learning analytics
- Controlling access to student educational data only to authorized parties
- Requiring authentication/verification from the appropriate entities



Linking Open Solutions & Standards

NEXT GENERATION BY DESIGN

- Utilization of existing standards first, development of new second
- Leverage open service interface definitions, emerging technologies and protocols for trusted, distributed data and identity management
- EdRec Team contribution to a number of open standards - including W3C, IEEE, and IMS Global
- EdRec Team involvement in Open Badges, Open Pathways, CLR, Hyperledger Indy, and Competency Catalyst

NEXT GENERATION

BY DESIGN

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CONCENTRIC SKY

Join us October 30 at EDUCAUSE
NGBD series to Explore EdRec
Visit DXtera.org

Discussion

Learn more at DXtera.org