CSU Learning Platform Services Webinar

Managing the LMS as a Hub Amidst a Highly Federated Spectrum of Learning Apps/Platforms

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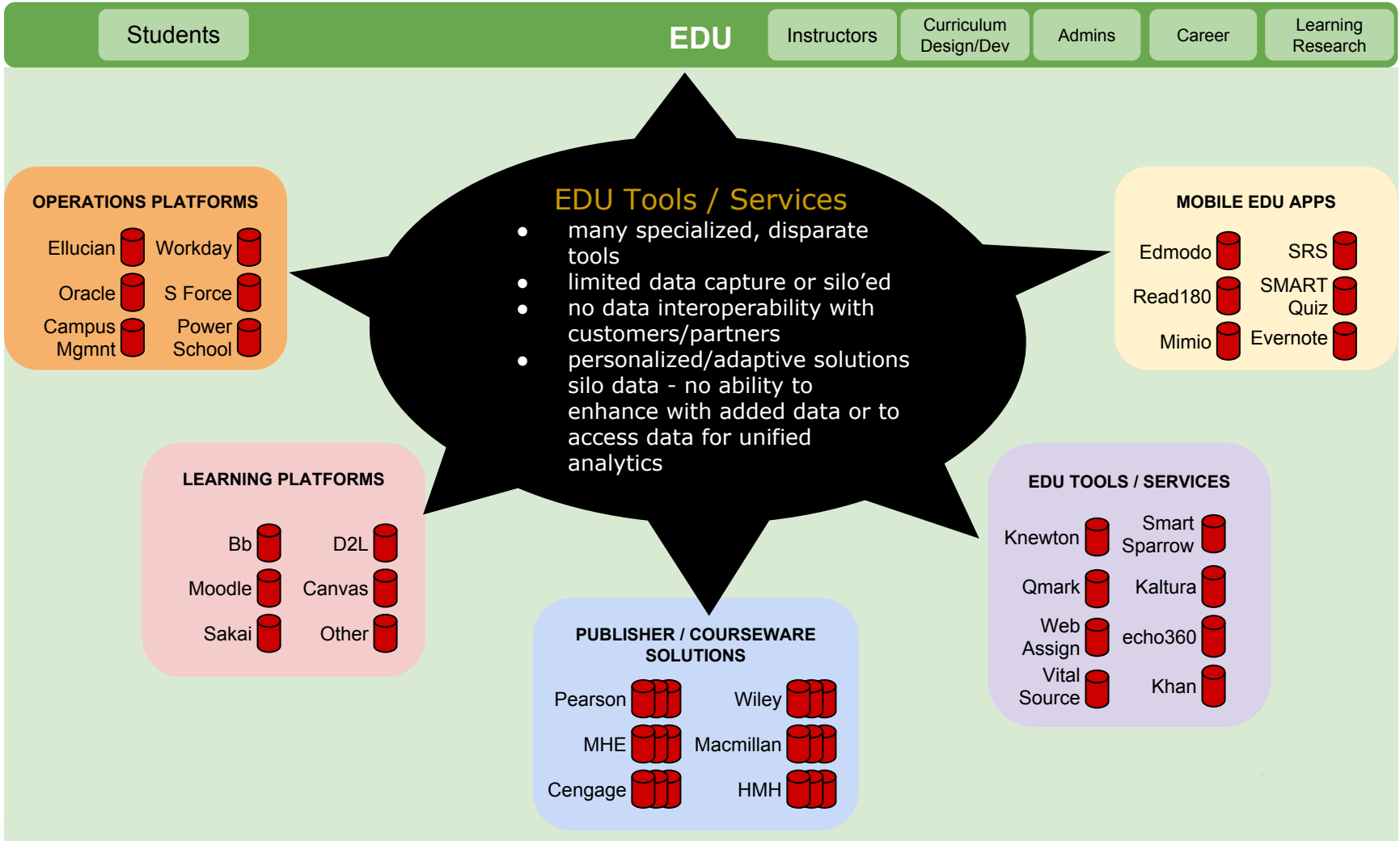
Background
Some Key Considerations as a Premise

- A primary LMS "hub" is one option BUT likely multiple LMSs or other learning apps/platforms that have some overlapping LMS capabilities

- One size does not necessarily fit all - recognize and evaluate the specialized online learning requirements both unique and in common across the spectrum of programs/curriculums.

- Constructing a Learning Platform Services (LPS) service framework should not imply ground up build out -- it should include a mix of partner/provider solutions, open standards frameworks, and internal "gap" build / integrate.
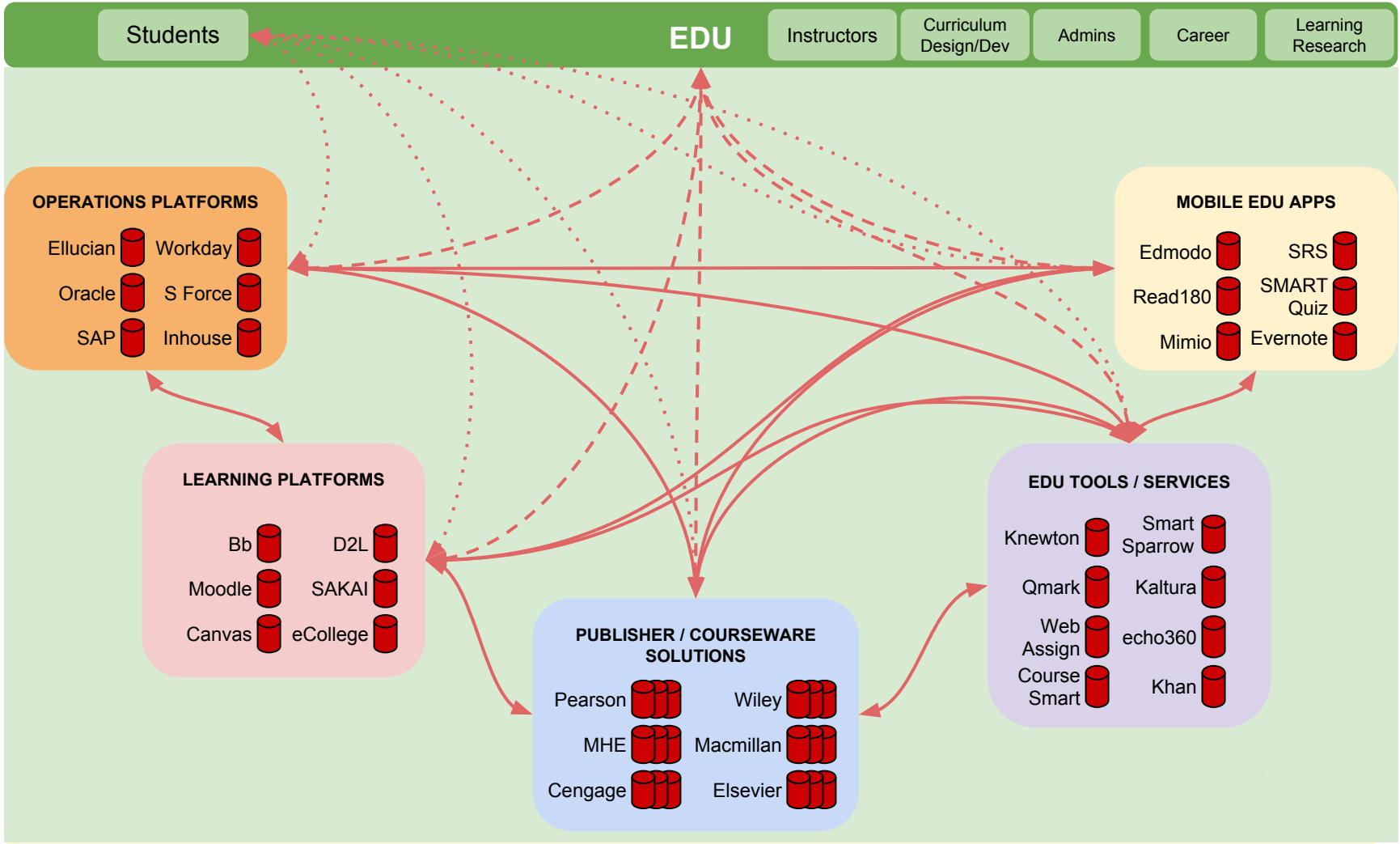
Background
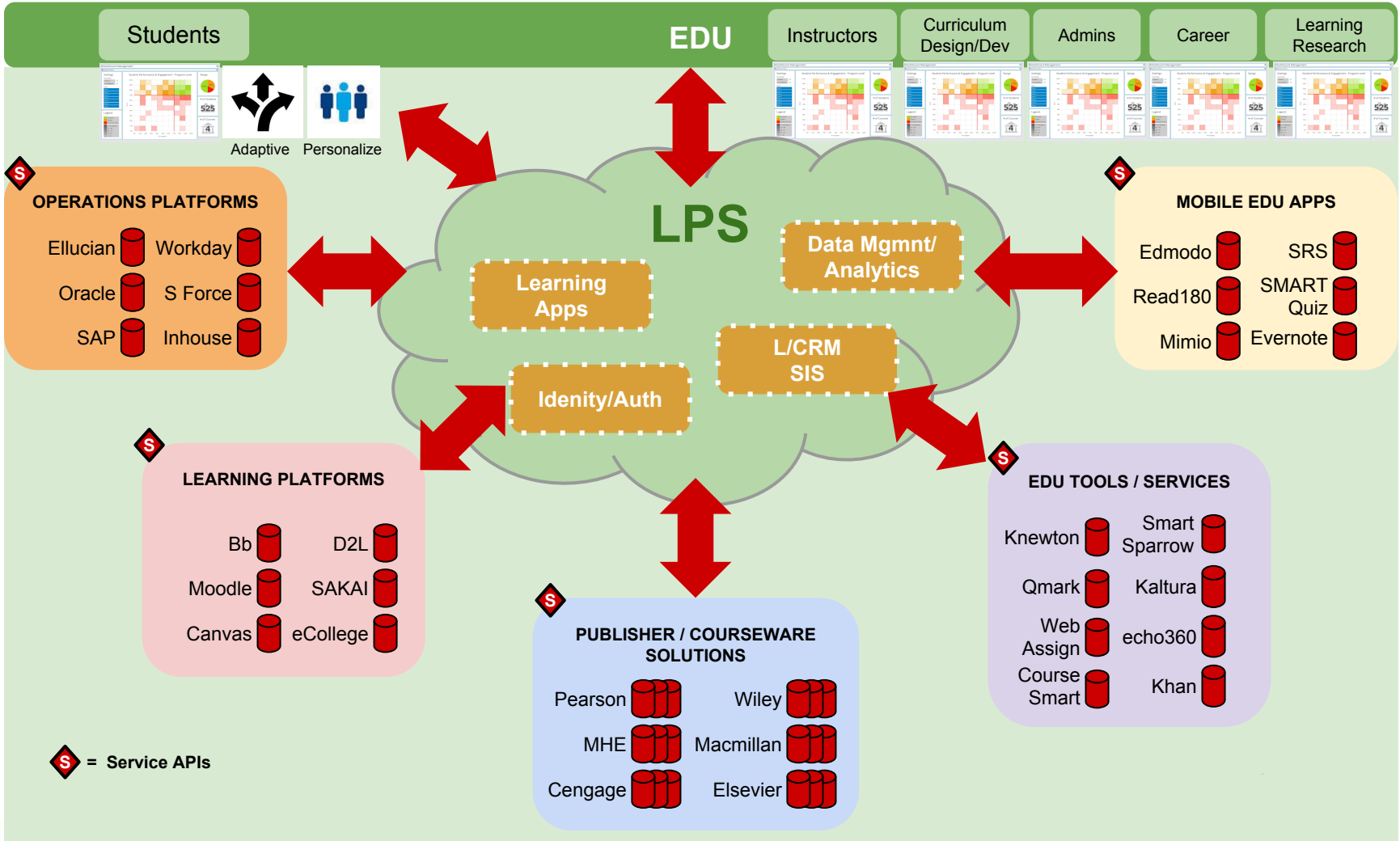## Highly Federated Collection of Platforms and Applications

Students **EDU** Instructors | Curriculum Design/Dev | Admins | Career | Learning Research

EDU Tools / Services
- many specialized, disparate tools
- limited data capture or silo'ed
- no data interoperability with customers/partners
- personalized/adaptive solutions silo data - no ability to enhance with added data or to access data for unified analytics

OPERATIONS PLATFORMS

Ellucian Workday
Oracle S Force
Campus Mgmnt Power School

MOBILE EDU APPS

Edmodo SRS
Read180 SMART Quiz
Mimio Evernote

LEARNING PLATFORMS

Bb D2L
Moodle Canvas
Sakai Other

EDU TOOLS / SERVICES

Knewton Smart Sparrow
Qmark Kaltura
Web Assign echo360
Vital Source Khan

PUBLISHER / COURSEWARE SOLUTIONS

Pearson Wiley
MHE Macmillan
Cengage HMH

Background
Challenged/Impossible Integration Across the Federated Ecosystem

Background
Enabling Ecosystem Wide Foundational Services for Interop / Unity

Students — Adaptive / Personalize

EDU

Instructors | **Curriculum Design/Dev** | **Admins** | **Career** | **Learning Research**

LPS

- Learning Apps
- Data Mgmnt/ Analytics
- Idenity/Auth
- L/CRM SIS

OPERATIONS PLATFORMS
- Ellucian
- Workday
- Oracle
- S Force
- SAP
- Inhouse

MOBILE EDU APPS
- Edmodo
- SRS
- Read180
- SMART Quiz
- Mimio
- Evernote

LEARNING PLATFORMS
- Bb
- D2L
- Moodle
- SAKAI
- Canvas
- eCollege

EDU TOOLS / SERVICES
- Knewton
- Smart Sparrow
- Qmark
- Kaltura
- Web Assign
- echo360
- Course Smart
- Khan

PUBLISHER / COURSEWARE SOLUTIONS
- Pearson
- Wiley
- MHE
- Macmillan
- Cengage
- Elsevier

S = Service APIs

The .EDU Online Learning Enterprise
Services "Bind" the Required Federated Environment

VLE 1

LMS 1   LMS (N)

LMS Intrinsic Tools

LTI
•
•
•
LTI

Pub Apps   eBook Apps   Admin

Mobile Apps   Social

VLE (n)

LMS 1   LMS (N)

LMS Intrinsic Tools

LTI
•
•
•
LTI

Pub Apps   eBook Apps

Mobile Apps   Social

Admin

System-Wide Apps / Services

Portal

Library

Messaging

L/CRM

SIS

S = Service APIs

EP = Service EndPoint

Learning Platform Services

VLE 1 LPS

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VLE (n) LPS

LPS Common
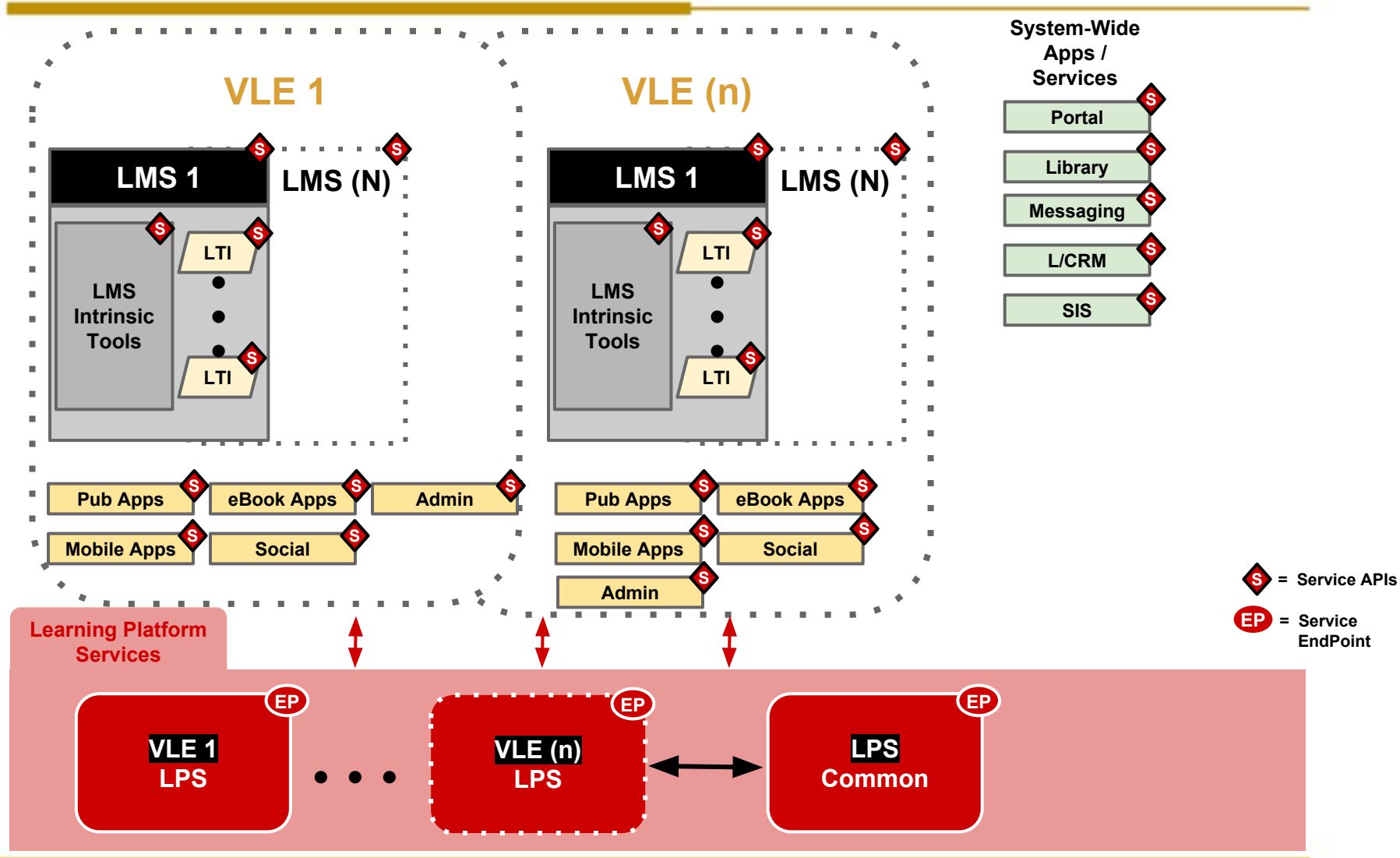
The Role of the LMS(s)
Orchestrate an Online Learning Experience

- Online learner/instructor on-ramp to and container for program/course curriculum imprints

- Workflows for curriculum consumption and instruction

- Interoperable with multiple learning activity based content and functionality based applications

- Some intrinsic tools / capabilities in common across all programs (e.g. Messaging, Discussion, Assignments, Grading etc)

- Potentially multiple LMS / LMS-like delivery platforms required to optimize for specific program/curriculum requirements (e.g. CBE, Adaptive, Instructor vs Independent Led, Training etc)

The Role of the Learning Applications
Specialized Apps Meet Program/Curriculum Requirements

- Introduce specialized, feature rich content and / or functionality delivery

- Different discipline curriculums require different Learning Apps

- Standalone and Learning Sequence or equivalent "container" or workflow integrated modality required

- Untethered mobile modality needs to be integrated or at least associated with the learning context / workflow

- Common app framework interoperability (via LTI) to support "plug-in" use of apps in context

- Apps required to be learning data interoperable, not just standalone silo'ed analytics

The Role of the Learning Data/Analytics

Data Services "Bind", Measure and Data Driven Action

- Federated platform/app data collection via minimally-invasive, light-weight, learning data collection

- Underlying learning data management / analytics services stack acting as the primary collection service endpoint

- Data Management/Analytics services stack requires:
  - a highly scalable event store (a.k.a. LES/LRS),
  - data access APIs
  - visualization/dashboarding support
  - notification/alerting
  - and intrinsic support for computational/algorithmic service extensions to drive "intelligence" based capabilities.

- Enable unified data driven capabilities such as dashboard role based analytics insights, predictive / at risk detection, curriculum/content efficacy, personalization, adaptivity etc.

The Role of Standards...
Key Foundational Services MUST Be Flexible and Interop

Service Level:

- Learning App Framework: IMS LTI
- Learning Data/Analytics: IMS Caliper, xAPI
- Identity/Auth: CAS, Shibboleth, OAuth (SAML)
- Learning Context: IMS LIS, One/OpenRoster

"Below the Service" Level:

- Content Interop: IMS CC, LTI, QTI/APIP, etc
- Curriculum: BLOOMs, SOLO, etc
- Many More...

Discussion