Banner extensibility continuum revisited
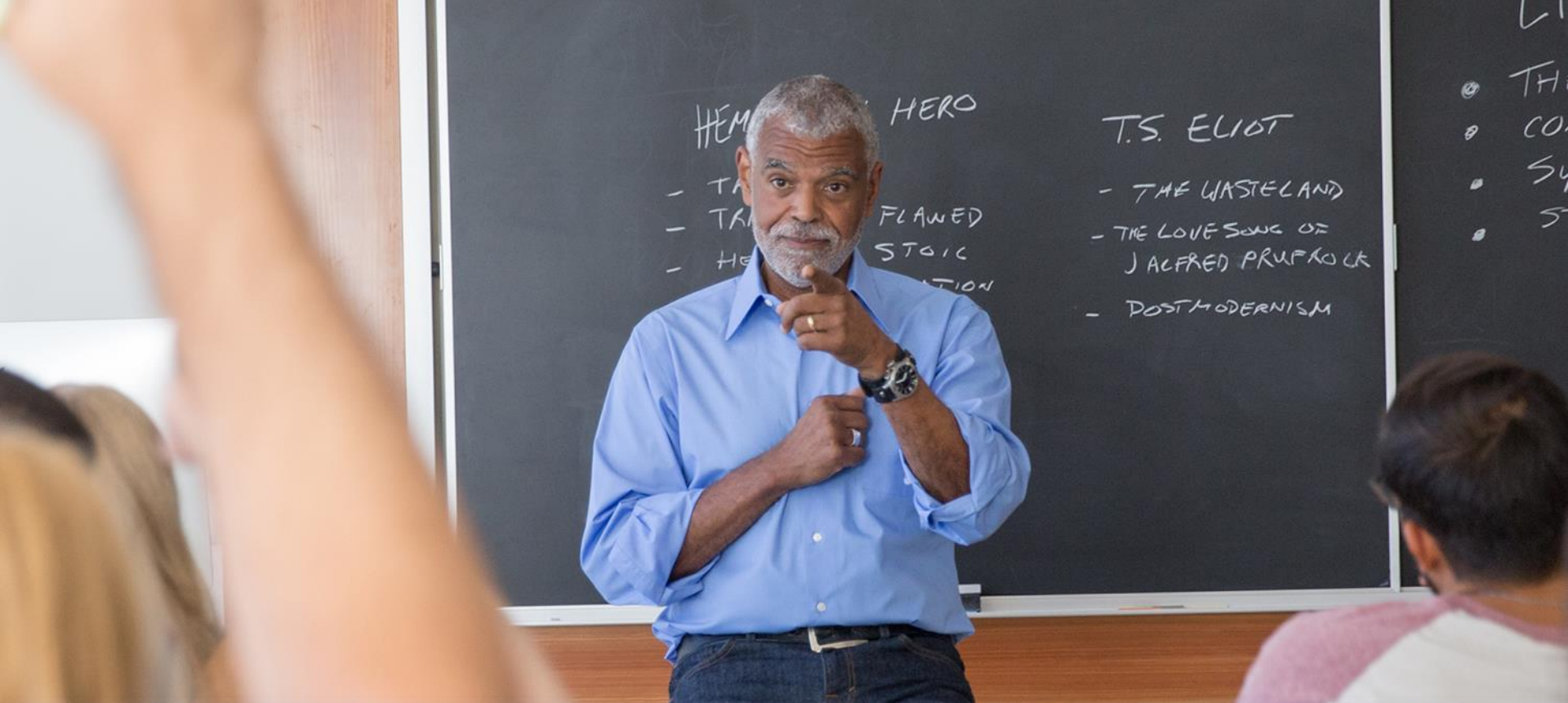
Mike Bates

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1

Agenda

1   Banner Transformation and XE
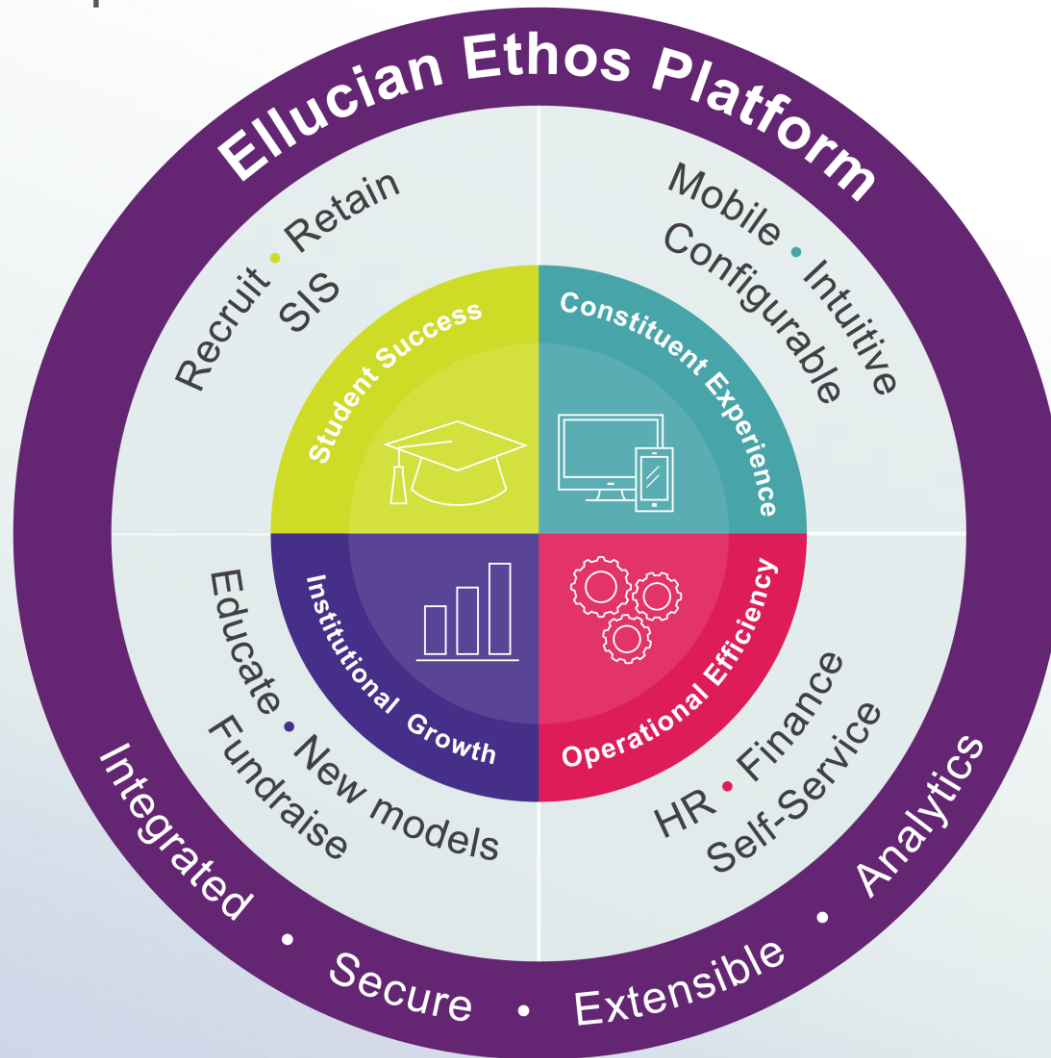
2   The progress toward iHub

3   Q&A

Our Story

Achieving student success advances our entire society

Enhancing every aspect of the modern connected campus

Ellucian Ethos Platform

Recruit • Retain
SIS

Mobile • Intuitive
Configurable

Student Success

Constituent Experience

Educate • New models
Fundraise

Institutional Growth

Operational Efficiency

HR • Finance
Self-Service

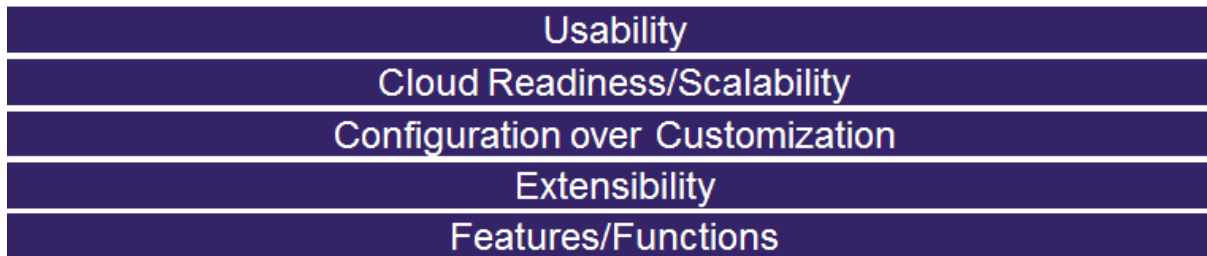Integrated • Secure • Extensible • Analytics

Ellucian Extensible Ecosystem (XE)

An innovative strategy grounded in common principles, standards, and services that help us leverage economies of scale across your portfolio
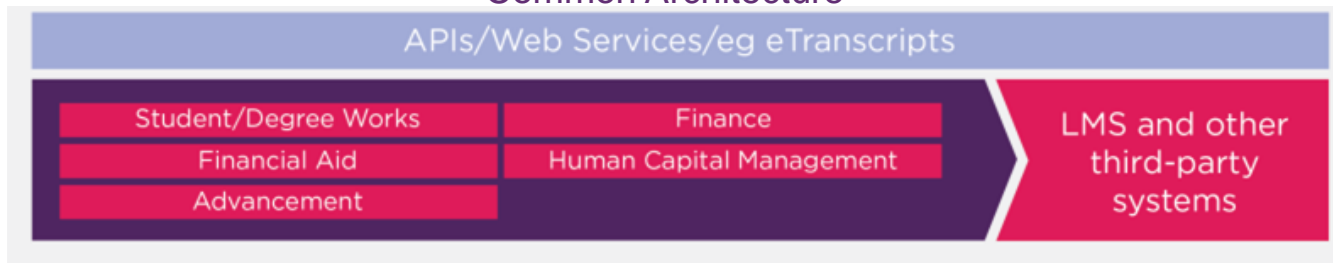
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XE Strategy and Design Principles

Mobile

Self Service

Admin UI

Cloud

XE Design Principles

Usability

Cloud Readiness/Scalability

Configuration over Customization

Extensibility

Features/Functions

Common Architecture

APIs/Web Services/eg eTranscripts

Student/Degree Works	Finance	LMS and other third-party systems
Financial Aid	Human Capital Management	
Advancement		

Applications Leveraging XE Strategy

- **Available Application**
- **Banner**
  - Catalog
  - Schedule
  - Grade Entry
  - Attendance Tracking
  - Event Management
  - Advising and Student profile
  - Registration
  - Employee Profile
- **Ellucian Elevate**
- **eTranscript APIs**
- **Ellucian Mobile**
- **Ellucian Portal**
- **Ellucian Perform**

Applications in Development

Banner

- o Academic history, electronic gradebook
- o Communication Management
- o Position Description
- o Purchase Requisition

Banner HR, Position Control, General Forms Transformation
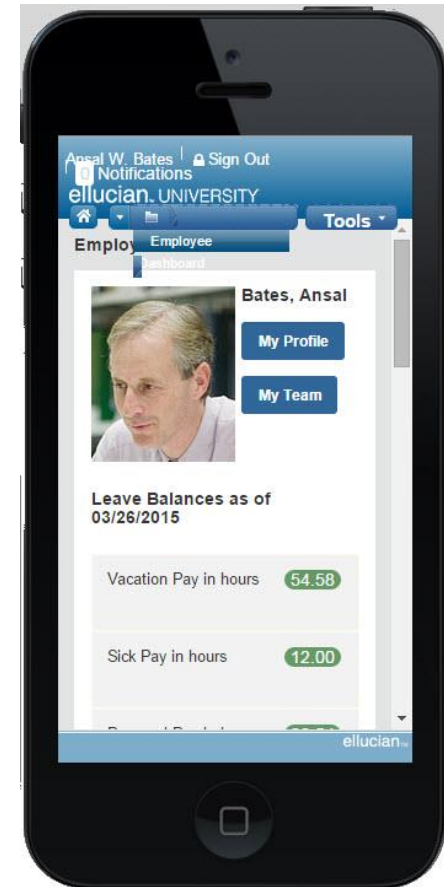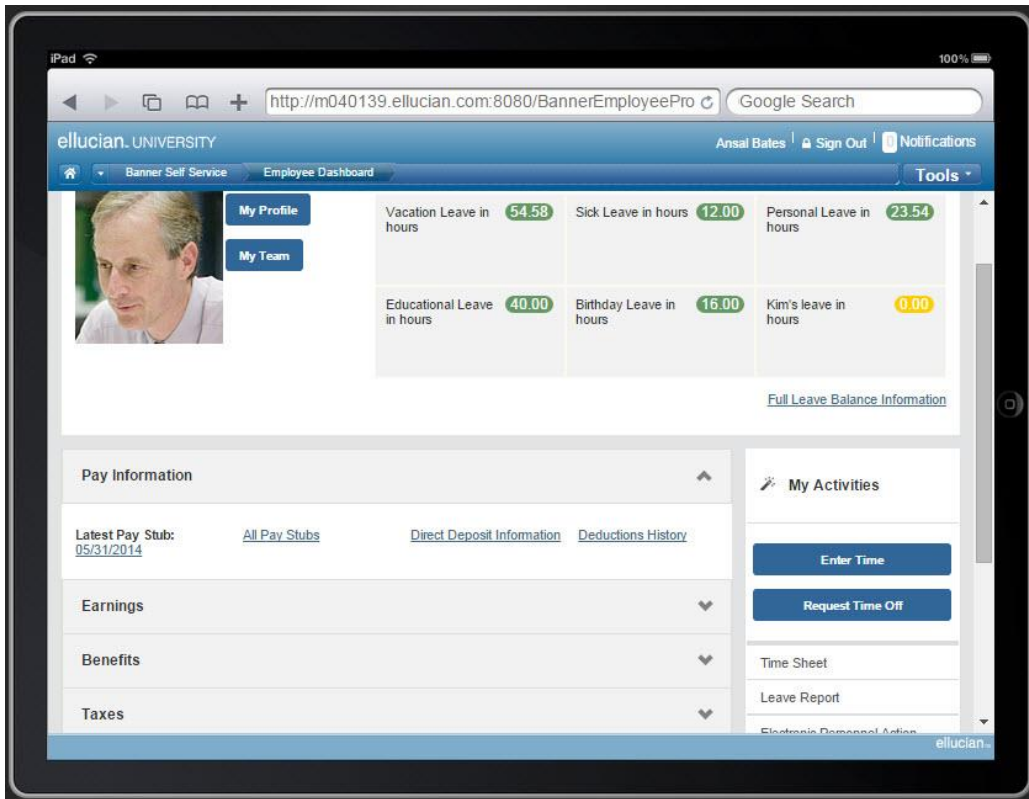
Banner Finance Forms Transformation

Ellucian Pilot

Banner Today

Tablet and Mobile Ready

Content First

Attendance Tracking

Registration Today

"**This was an implementation that was just a dream—we have yet to have a single negative comment on our registration listserv or any calls to our office with issues…the students thought it was very intuitive and easy to use and used both the registration planning and registration function.**"

University of Oklahoma

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Acceleration of Banner

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Modernizing Banner

Administrative Imperatives

- Technology—Eliminate Oracle Forms

- Usability—Consumer web in high productivity mode

Yesterday

Today… Banner HR in Beta

Modernizing Banner

Self-service Imperatives

- Usability—Consumer web for casual users

- Rich functionality, evolving with Higher Education

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Modernizing Banner

Integration Imperatives

- API-based integrations
- Enterprise strength connections

On-Prem
Ellucian Applications

Cloud-Based
Ellucian Services

Ellucian
Integration
Hub

On-Prem
3rd-Party Applications

Cloud-Based
3rd-Party Services

On-Prem
Homegrown Applications
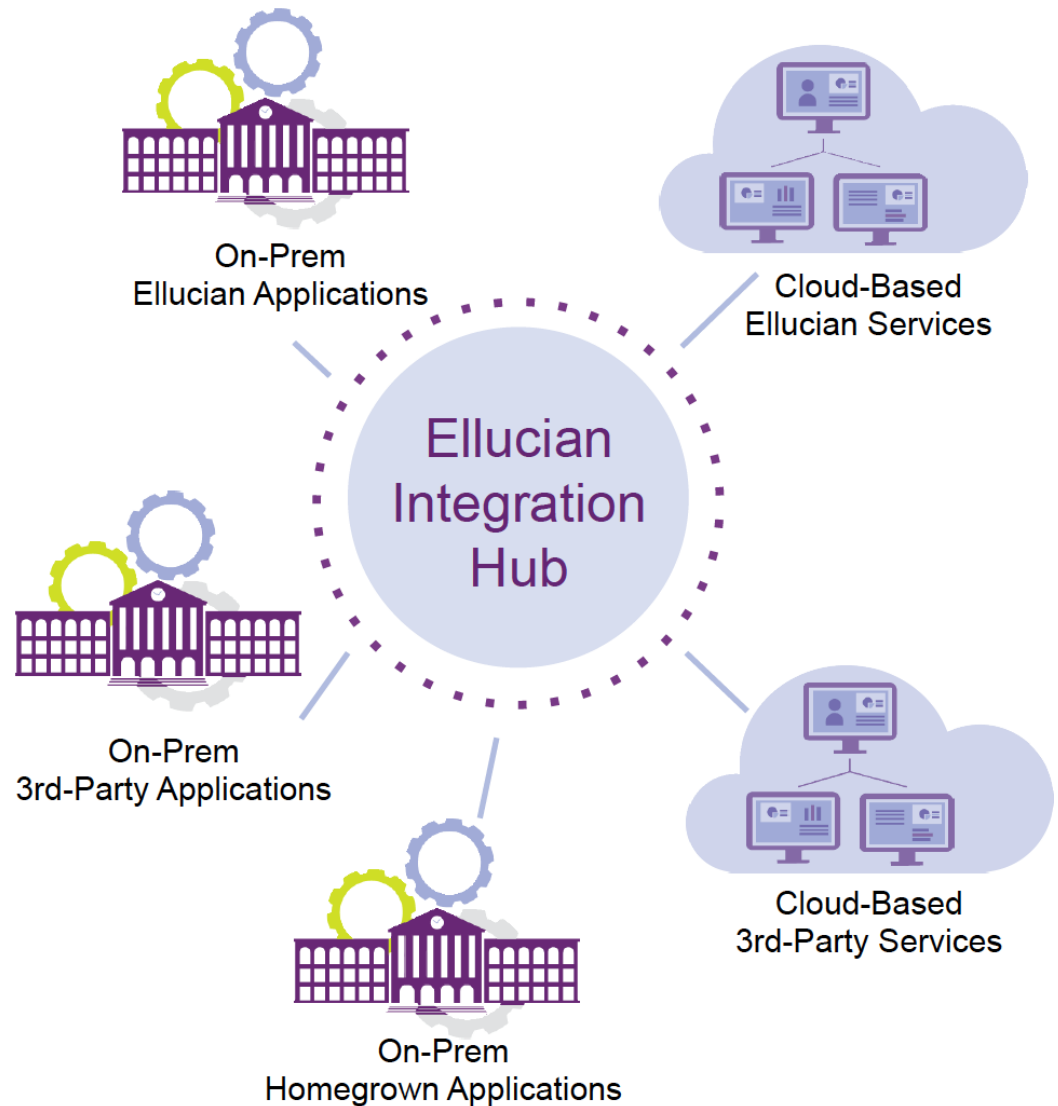
Target Roadmap Delivery

Employee Profile

Human Resources Admin

Finance - Requisition

Finance Admin

Registration self-service

Student Admin (A/R, Financial Aid, core Student)

Student self-service (modular delivery)

2H2015

2H2015

2016

| Q3 | Q4 | Q1 2015 | Q2 | Q3 | Q4 | Q1 2016 | Q2 | Q3 | **2016** |
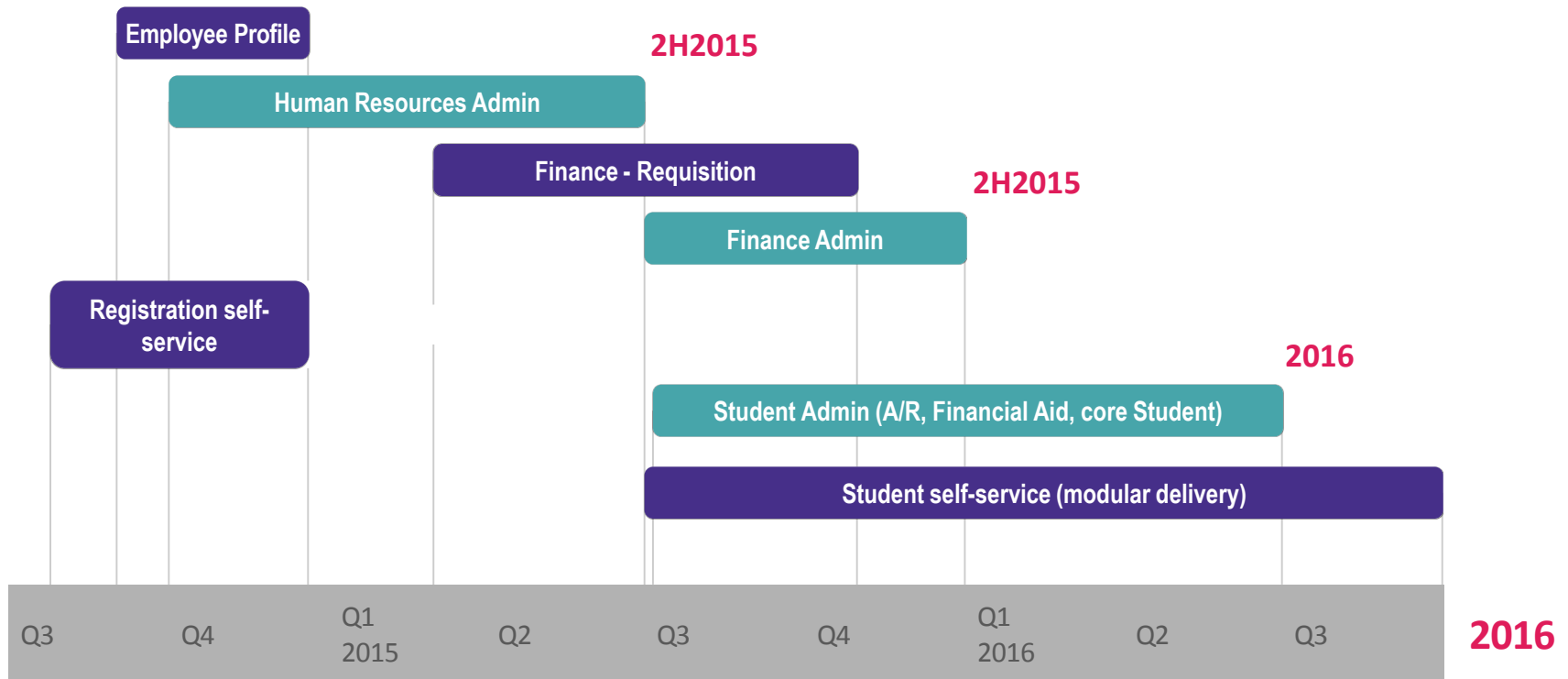
Future Ready Technology

Banner powered by XE – Deployable Applications

Identity Provider (EIS, CAS, etc.)
Application Navigator

Lightweight Web Apps and APIs

Faculty Grade Entry	Employee Profile
Advising Student Profile	Student Registration
Human Resources API	
Finance API	
Student API	

Transformed Page Modules

- Human Resources
- General
- Finance
- Student (A/R Financial Aid, Student)

Banner Database
DBEU
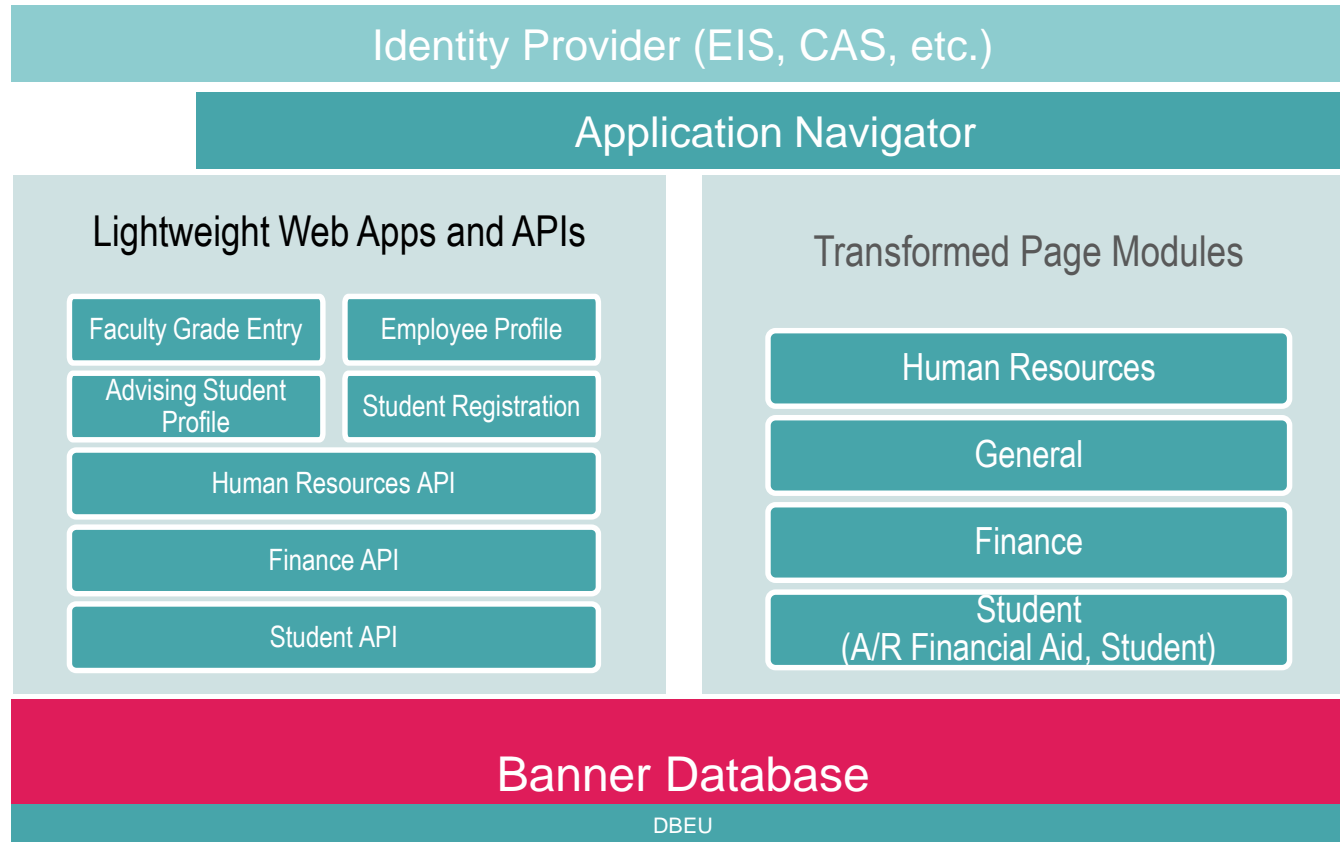
Changing Banner is Simplified through Extensibility Tools

Branding, Vocabulary

Common Extensibility Tools

Foundations, Frames

Extensibility Tools

Transformed Page Modules

- HTML5
- Java
- Ellucian Libraries
- Core Libraries and Framework

Banner Lightweight Web Applications and APIs

- JavaScript (Backbone/JQuery, AngularJS)
- Common Ellucian Plugins
- Grails Web Framework / Groovy

Extensibility Tools

Domain Ext, CPC

Banner Database

DBEU

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The Extensibility Continuum (expanded view)

	Source Required?	Output	Admin	Web Apps
Configure Applications "non-developer" tools (Analysts, UXD)				
• Hide, reorder, modify, add page components (CPC Tool)		JSON	✔	✔
• Change colors, fonts, graphics	–	tbd	–	–
• Change field labels, error messages		tbd	–	–
Extend Applications Developer-centric tools, documentation				
• Extend domains (Domain Extension Tool, documentation)	✔	.war	✔	✔
• Extend Business Logic (documentation)	Input only		–	✔
• Extend transformed administrative pages (Foundations, Frames tools)		.jar	✔	–
Modify Applications Developer-centric documentation				
• Modifications that cannot be made with configure or extend tools (Source code in Git)	✔	.war	✔	✔
Develop Applications Developer-centric tools, documentation				
• Developers Guide—getting started, standards	–	–	✔	✔
• Ellucian-developed Grails plugins	✔	.war	✔	✔
• Application Development Tools (Foundations, Frames, Page Builder)	contingent	.war	✔	✔

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Configure Page Components

Provides a tool for changing data entry fields on pages in Grails applications

Needed when

- Baseline data entry fields are not used by your institution
- Field level validations do not meet your institution's needs
- Modifications made to the domain layer need to be exposed in the user interface.

Available now!

Configure Page Components

Characteristics

- Non-developer tool
- Does not require application source
- "Built-in" to applications via Grails plugins (i.e., Banner Platform Plugins)

How it's used

- Application is configured prior to deployment for extension location
- Authorized user accesses the tool via the Tools menu in the Banner app
- Changes made to pages using the tool are saved as JSON files
- JSON files are injected at runtime to override page behavior

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Configure Page Components Features

Hide existing fields

Change the type of fields

Change the editable length of fields (within database limits!)

Add fields for unused or extended domain attributes

- Checkbox, Combobox, Datebox, Decimalbox, Intbox, Listbox, Textbox
- Multiline Component, Radiogroup, Spinner
- Datebox (with Time Value enhancement)
- Lookup Control
- Large Text Box for CLOB

Add validation to fields

Domain Extension Tool

Provides a mechanism for extending the domain (data access) layer of Grails applications

Needed when

- the application does not capture all the data required by your institution
- data requirements at your institution require remapping fields in the UI to different database columns

Domain Extension Tool

Characteristics

- Developer-oriented tool
- Requires application source
- Extends the domain layer when the application is compiled

How it's used

- .jar file added to application source
- XML file defines domain extensions – fields, mappings, constraints
- AST transform at compile time

Domain extension process flow
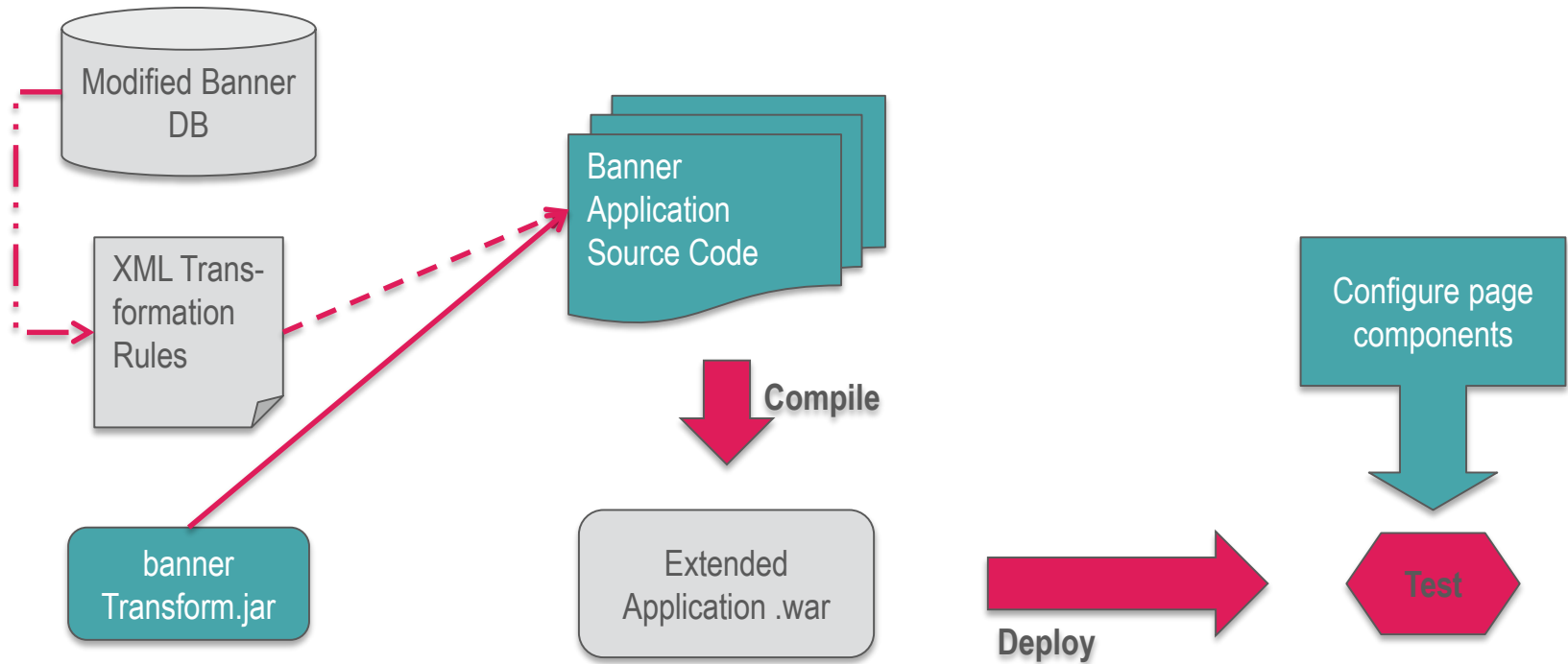
Extensibility Tools for Transformed Banner Pages

Eclipse-based development tools for extending transformed Banner pages

Needed when

- Baseline data entry fields are not used by your institution

- Field level validations do not meet your institution's needs

- Modifications made to the domain layer need to be made and exposed in the user interface.

- Forms-based business logic needs to be changed

Available soon!

Extensibility Tools for Transformed Banner Forms

Characteristics

- Developer-oriented tool set

- Foundations tool for server-side code (model, controller)

- Frames tool for client-side code (view)

- Requires application source code

How it's used

- Developer accesses application source code

- Establishes extension packaging and inheritance hierarchy

- Uses tool to define extensions – often wizard-driven and/or rule-based

- Extensions are compiled into the application as separate .jar file

Extensions defined
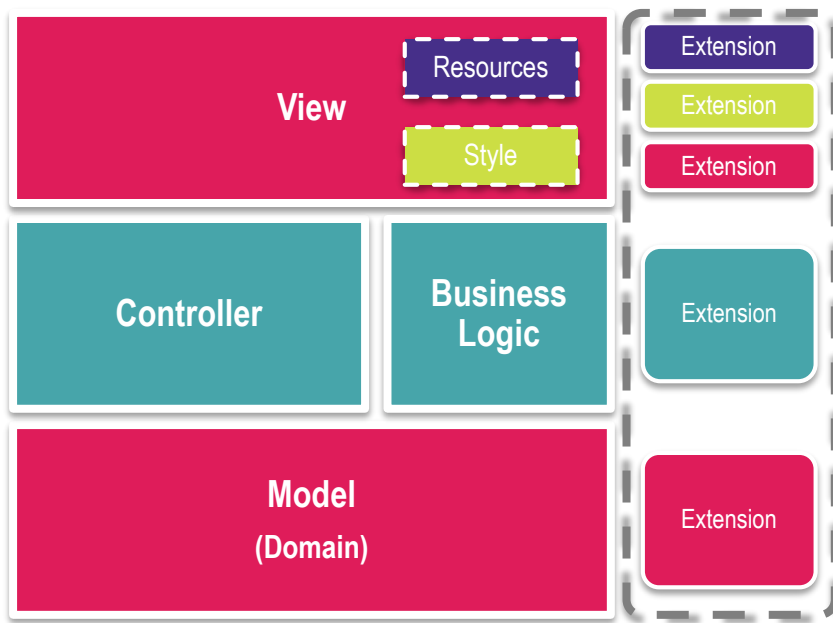
- **Supplemental code or code artifacts that change the application**

- **Made separate from application source**

- **Not overwritten when the system is upgraded**

- **"Future-proofs" institutional personalization**

- **Implementation may vary based on application architecture**

The Extensibility Continuum (expanded view)

	Source Required?	Output	Admin	Web Apps
Configure Applications — "non-developer" tools (Analysts, UXD)				
• Hide, reorder, modify, add page components (CPC Tool)		JSON	✔	✔
• Change colors, fonts, graphics	–	tbd	–	–
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HEDM

Higher Education Data Model

For organizations worldwide, the information that they create, manage and share becomes mission critical to the overall success of the organization. Frequently, the information is contained within complex data structures and each separate application has a different concept of how that information looks, how it is structured and how it is communicated.

At Ellucian, our on-going work across the HE sector led us to recognize that enabling our customers to unlock this information was a necessity. To achieve this, making multiple systems work "as one" was a critical requirement. Put simply, it meant that we needed a standardized means of illustrating the world of higher education.

In many industries standards already exist, albeit with only partial adoption. In the HE sector, however, Ellucian had a unique opportunity to start with a "clean slate" and to create something new…and so we created the Higher Education Data Modal (HEDM).

HEDM is a defined standard to illustrate a uniform view of "the world", so that users can view data and interact with each other. The data model itself creates a defined data object or entity, reaching all corners of an institution, covering Recruitment, Students, Finance, Advancement and beyond.

HEDM is designed to make data easy to read and removes the complexity of tables, schemas and relational structures. It provides information where and when you need it.

HEDM

The model is segmented into logical groupings leveraging years of experience and domain knowledge.

HR / Payroll	Student	Foundation
Finance	Recruitment	Curriculum Management
Financial Aid	Fund Raising	Registration

applications point of view

HEDM entities or data objects are our method to talk with other solutions whether Ellucian or 3rd Parties

The notion of HEDM is part of our core understanding of our application and is not a "separate" thing.

HEDM adoption is defined in our roadmaps.

We publish messages to our best ability, meaning fully formed and not for restrictive use cases.

Our internal events that enable us to publish are not restrictive based on a centric view of who consumes the information.

Ellucian Integration Hub

- **Introducing the cloud-based Ellucian Integration Hub**

- **Provides hub-and-spoke, publish/subscribe data services**

- **Use for integration out-of-the-box**

- **Included as a part of every Ellucian application**

- **Uses open standards and HeDM**

- **Works well with ESBs and IPaaSs of your choice (no vendor lock-in)**

- **Offers out-of-the-box integration with Higher Education specific services**

On-Prem
Ellucian Applications

Cloud-Based
Ellucian Services

Ellucian
Integration
Hub

On-Prem
3rd-Party Applications

Cloud-Based
3rd-Party Services

On-Prem
Homegrown Applications
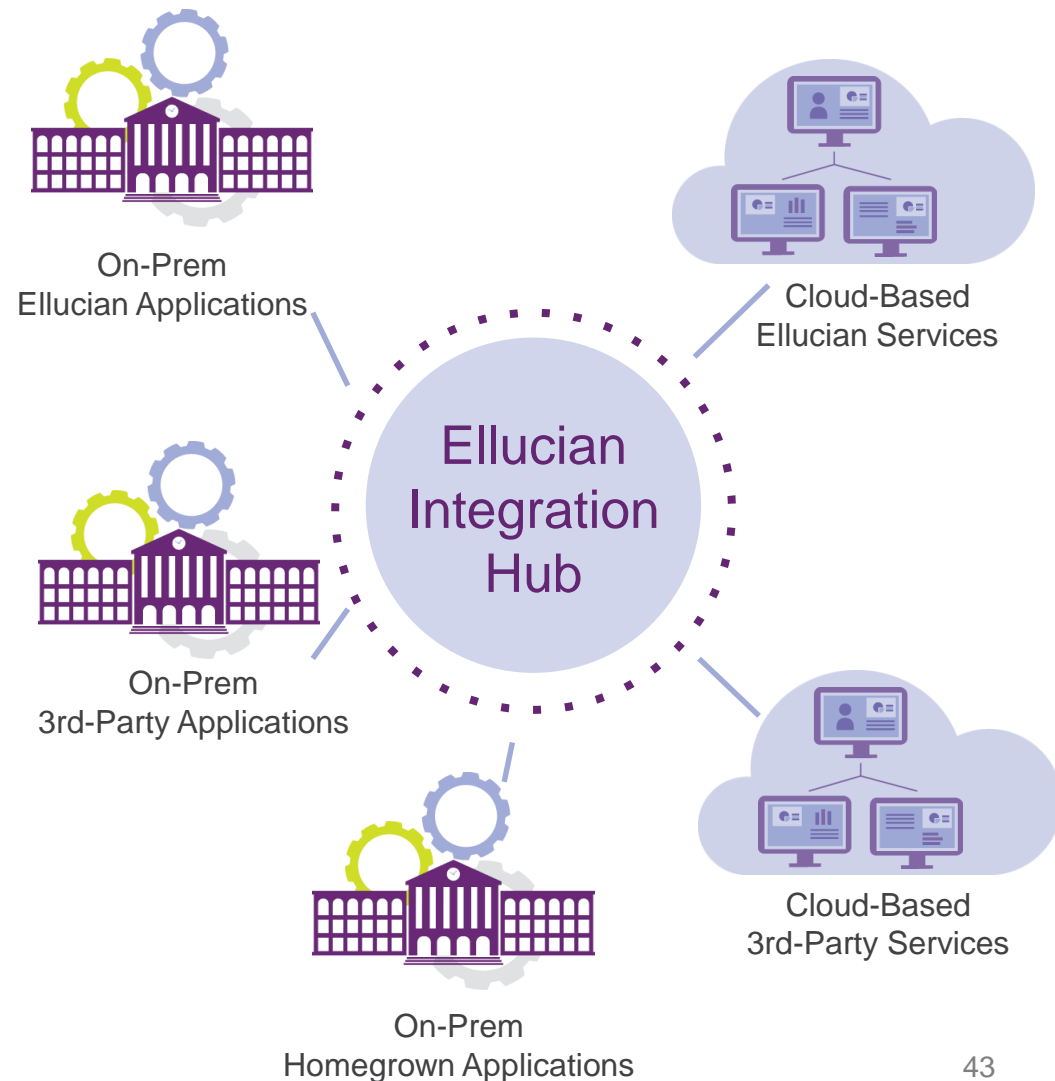
XE Guide is Here! Visit ellucian.com/xeguide

(1) Plan XE Deployment

(2) Get current with Banner

(3) Enable Single Sign-On

(4) Communicate, Test, and Train
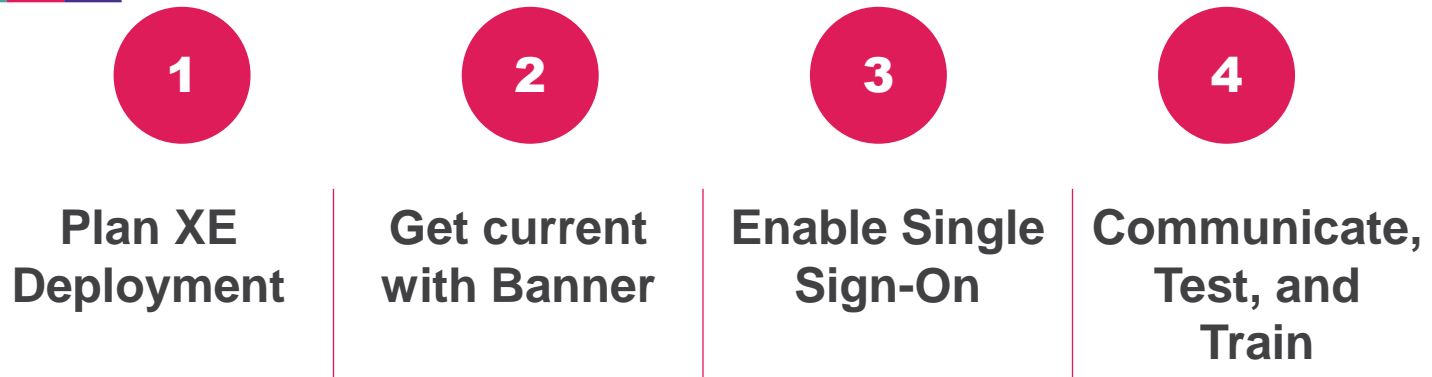
Your guide to Banner XE adoption

Plan Your XE Deployment — Get Current with Banner — Enable Single Sign-On — Communicate, Test, and Train

Welcome to the XE Guide

Mobile. Simple. Flexible. That's the vision behind the Ellucian Extensible Ecosystem (or simply, "XE"). Institutions should be able to extend, configure, and add solutions as campus needs evolve—and do so without sacrificing existing investments.

This site is your interactive guide to tracking your institution's progress. Check the "Step Completed" box at the bottom of each page as you progress and it'll be here for you when you return.

This site is your one-stop-shop for deploying XE applications. Ellucian's XE strategy makes it easier and more efficient for institutions to implement, manage, and extend our solutions. This innovative strategy supports improved functionality, better integration, more agile development, expanded points of access for users, and innovative delivery methods. But don't take our word for it, here's what other institutions have to say:
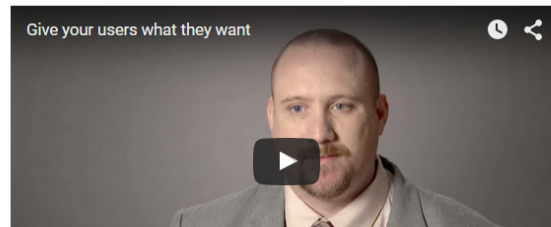
Learn More

What's new with Banner (PDF)

Banner Transformation Overview (PDF)

Texas Tech prepares for future growth with XE (video)

Available XE Apps

Give your users what they want ▶

Start Process ➔

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Places to Find More Information

XE Guide – Adoption help with XE

- www.ellucian.com/xeguide

eCommunities

- Banner community
  - White papers, webinars, documents, etc.
- Banner HR and Banner Finance communities

Roadmaps

- http://www.ellucian.com/Roadmaps/

Download documentation from the Support Center

Attend an Ellucian education class

Contact your Client Partner

Contact us for more information.

ellucian.

Mike Bates

Mike.Bates@ellucian.com