HEDM and Integration

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Agenda

1. The challenges faced
2. The potential benefits
3. How the HeDM relates to the Irish HE sector
4. Q&A

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The challenges faced

How is data we use everyday defined and shared
How do customers integrate with our solutions
How do partners integrate with our solutions

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The Challenges Faced

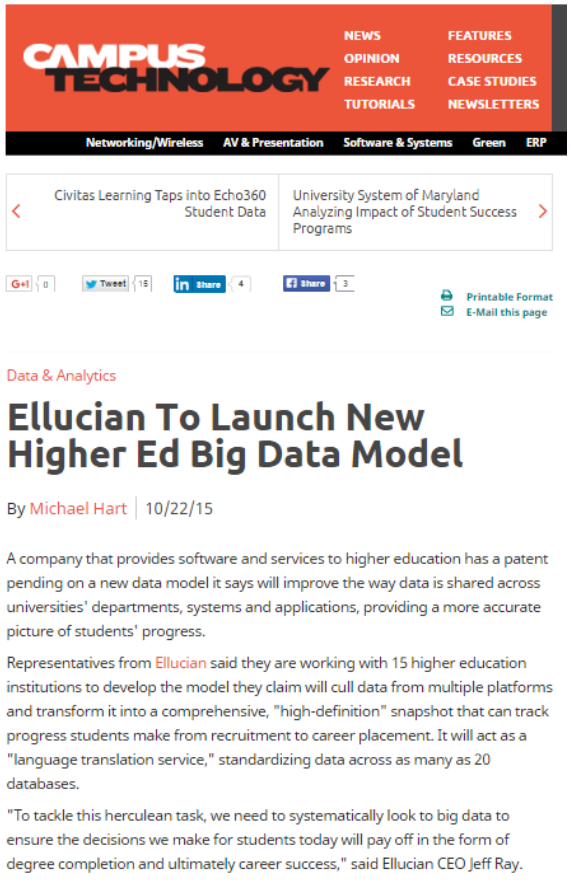
- Information created, managed and potentially shared by Higher (Tertiary) Education institutions is mission critical to overall success
- Such information is frequently contained within complex data structures silo-ed in separate applications
- Ellucian recognise that institutions use many suppliers' applications and home-grown applications
- Unlocking this information is a necessity
- Integrity, ownership and sharing are major challenges

Integration and Standards

- **Varying degrees of product/solution integrations exist:**
  - Batch, flat file, real-time, messaged based integrations, web service etc.
- **Making multiple systems work “as one” is a critical requirement**
- **In many industries standards already exist for integration, albeit often with only partial adoption:**
  - Inter-banking standards
  - A Vodafone subscriber can easily call an O2 subscriber
  - The Schools Interoperability Framework, Systems Interoperability Framework (UK), or SIF, is a data sharing open specification for academic institutions from kindergarten through workforce

Ellucian announces Higher Education Data Model (HEDM) and Integration Hub

- **To improve data sharing across universities' & colleges' departments, systems and applications**
  - Providing more accurate picture of students' progress
- **Single model of all concepts in the entire domain of Higher (Tertiary) Education administration**
- **Cloud-based, loosely-coupled, hub and spoke integration**
- **HEDM 4.0 in GA**
- **iHub 1.0 GA in Feb, 2016**



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Data & Analytics

Ellucian To Launch New Higher Ed Big Data Model

By Michael Hart | 10/22/15

A company that provides software and services to higher education has a patent pending on a new data model it says will improve the way data is shared across universities' departments, systems and applications, providing a more accurate picture of students' progress.

Representatives from Ellucian said they are working with 15 higher education institutions to develop the model they claim will cull data from multiple platforms and transform it into a comprehensive, "high-definition" snapshot that can track progress students make from recruitment to career placement. It will act as a "language translation service," standardizing data across as many as 20 databases.

"To tackle this herculean task, we need to systematically look to big data to ensure the decisions we make for students today will pay off in the form of degree completion and ultimately career success," said Ellucian CEO Jeff Ray.

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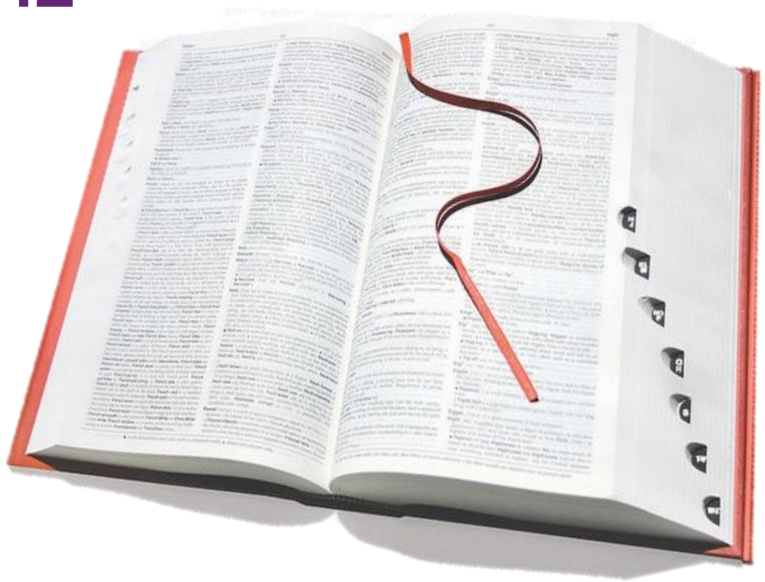
HEDM

- **Unified Vocabulary**
  - Domain-driven
  - Not tied to the naming convention, processes or tables of specific applications
  - Same vocabulary is used by all Ellucian products e.g. Banner, Quercus, Elevate, etc…
- **Models real-world concepts in HE**
  - Entity oriented
  - No derived business logic needed
  - Real-world name = name of object in the model



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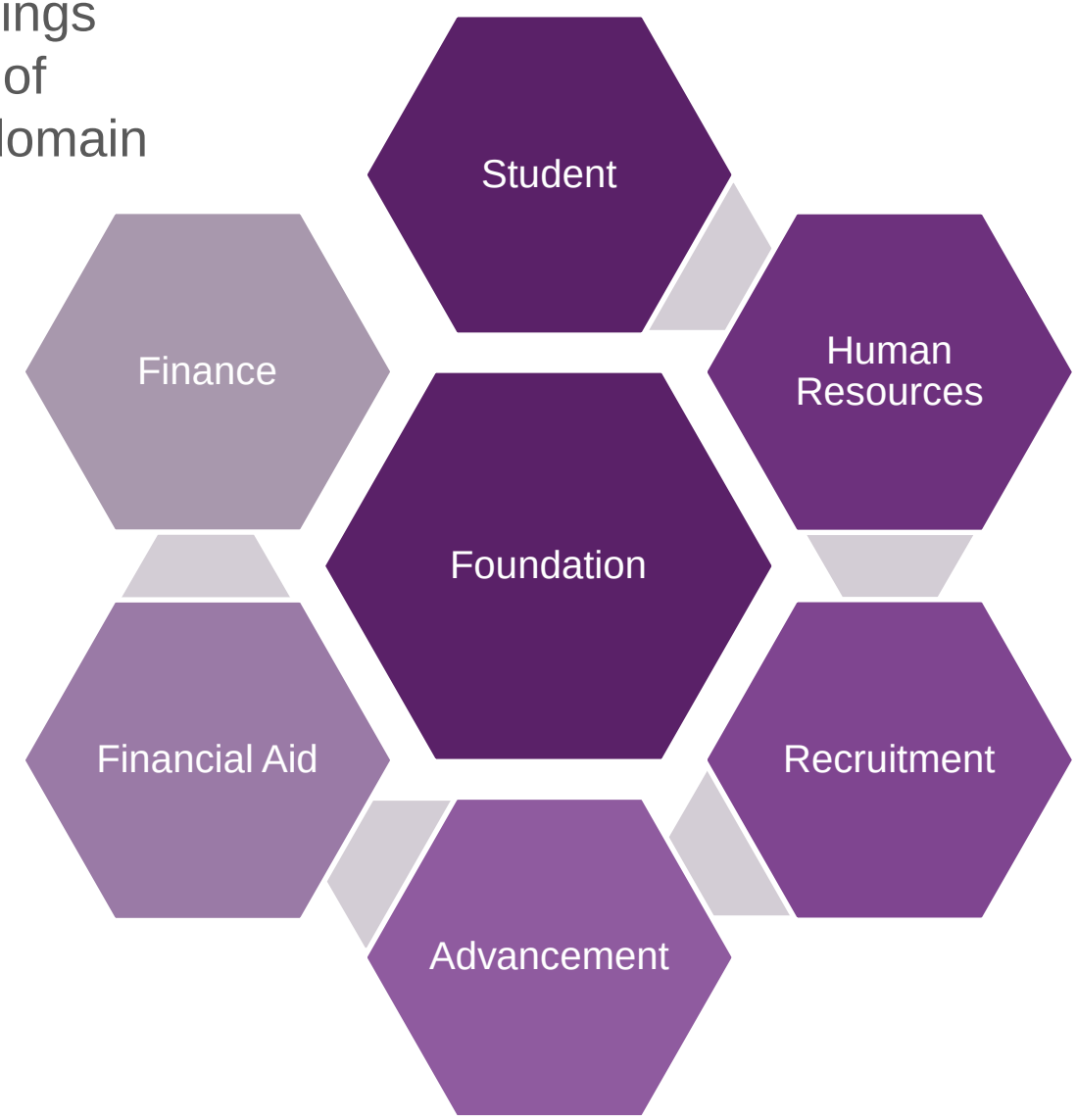
The model is segmented into logical groupings leveraging years of experience and domain knowledge.



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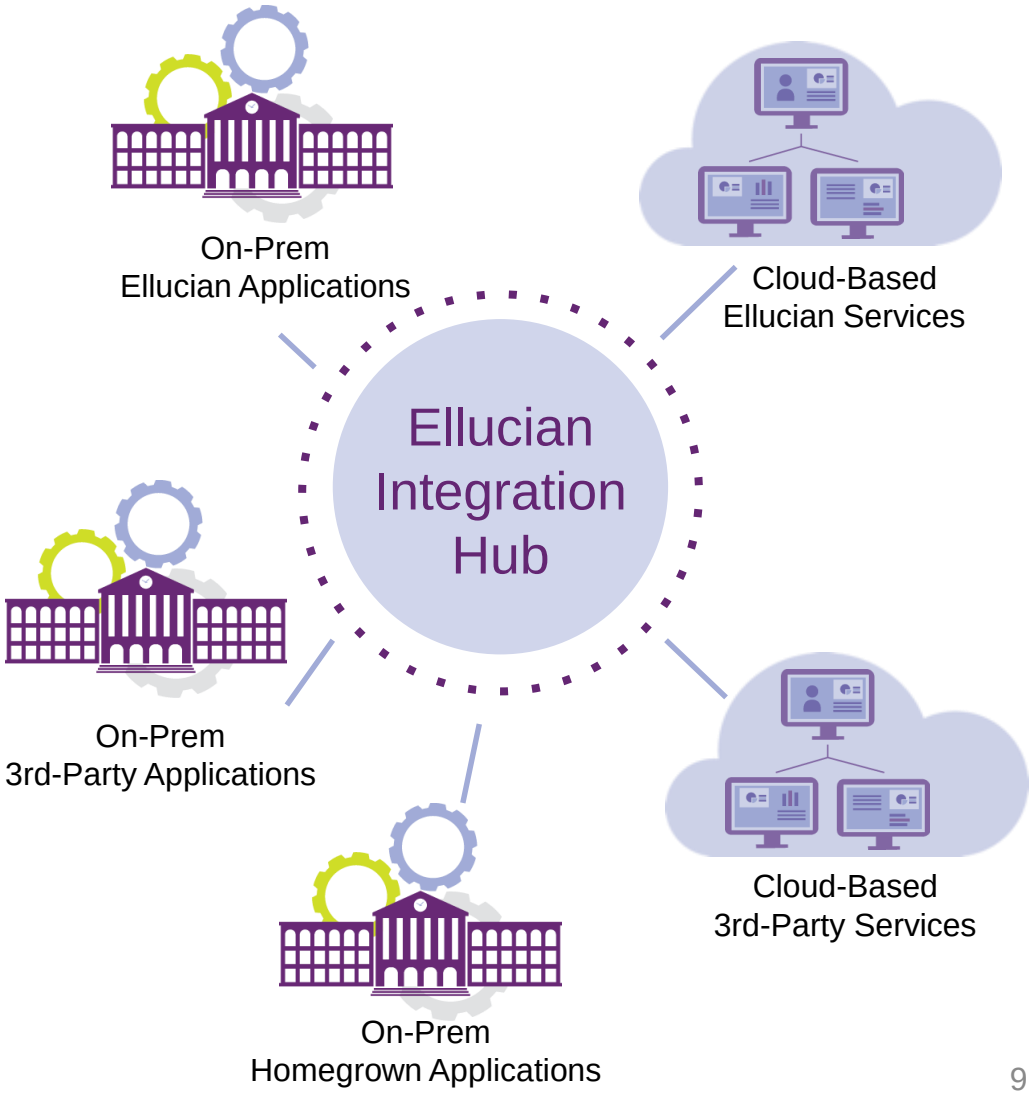
How the Integration Hub Works

- Promote loosely-coupled, hub and spoke integration
- Institute a messaging architecture in lieu of multiple point-to-point solutions
- Allow institutions to establish their own messaging enterprise
- Provide a ***cloud-based*** data transport mechanism
- Out-of-the-box provided for each licensed Ellucian application
- Uses open standards and HEDM



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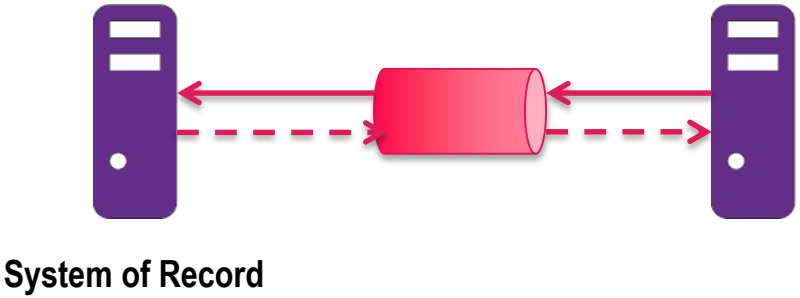
Types of Integration

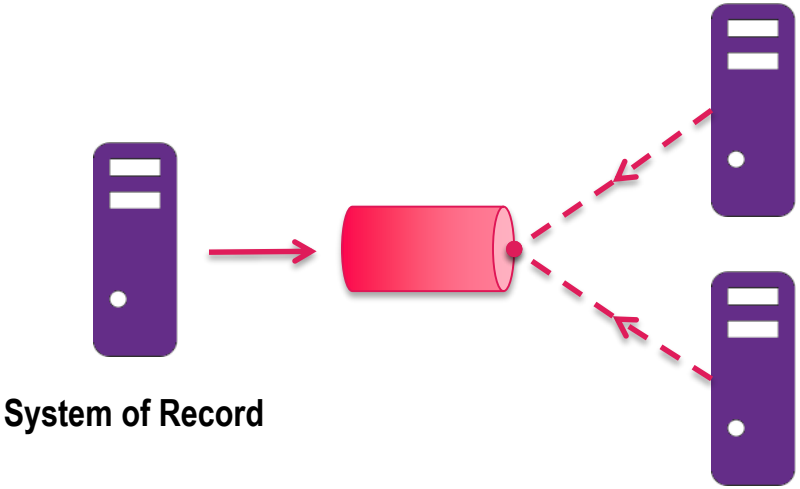
Approach	Layer	What	Type	Why
Portal Integration & Single Sign-On	Presentation	Channels/Portlets/Web Parts Reduced Sign-On	Interactive	Provide user-centric and role-based access
Process Automation	Application	Workflow	Near real time interchange	Orchestrate business processes
Publish-Subscribe Messaging	**Application**	**Enterprise RESTful JSON messages**	**Near real time interchange**	**Synchronize changes to enterprise data**
Request/Reply Messaging	**Application**	**Request and reply RESTful JSON messages**	**Near real time interchange**	**Request services, data, or changes to data**
Method Invocation	Application	Remote Procedure Calls, CORBA, Java RMI, .Net Remoting	Near real time interchange	Provide tight coupling – limited to core modules
Batch / ETL	Data	Fixed transfers of data in blocks	Scheduled	For bulk data loads
Database Replication & Sharing	Data	Database to database at the table level	Scheduled and real time interchange	Share data when applications use same data model

Supported messaging types

- **Request/Reply**
  - aka synchronous request/reply
  - Hub acts as proxy between two parties



- **Publish/Subscribe (Pub/Sub)**
  - asynchronous
  - A ‘hub & spoke’ approach whereby parties subscribe to receive certain messages



The potential benefits

Better integration, better monitoring, better availability
Reduced costs also through scalability
Flexibility, better user experiences

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Integration Hub at Universities and Colleges

- **Simpler integrations**
  - Requires less testing effort
- **Systems growth**
  - Hub and spoke
  - Adding another system requiring integration only needs a HEDM adapter
  - Publish and subscribe drives repeatability
  - Technology stack and standards independence
- **Cloud architected**
  - Microservices architecture
  - Highly available, Scalable
  - Aggressive monitoring and automated response. Self-healing.

Reduced costs

"For every dollar spent on enterprise applications, an additional $4 - $5 is spent on programmatic adaptation and integration of those applications into the existing enterprise environment." - Gartner

Tying it all together

Ellucian Identity Services

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Introducing Ellucian Identity Service (EIS)

- **Enterprise middleware identity and access management solution for higher education.**
- **Secures access to enterprise web applications both on-premises and in the cloud, allowing these applications to participate in enterprise-wide single sign on even across disparate protocols.**
- **EIS 1.1 just released**

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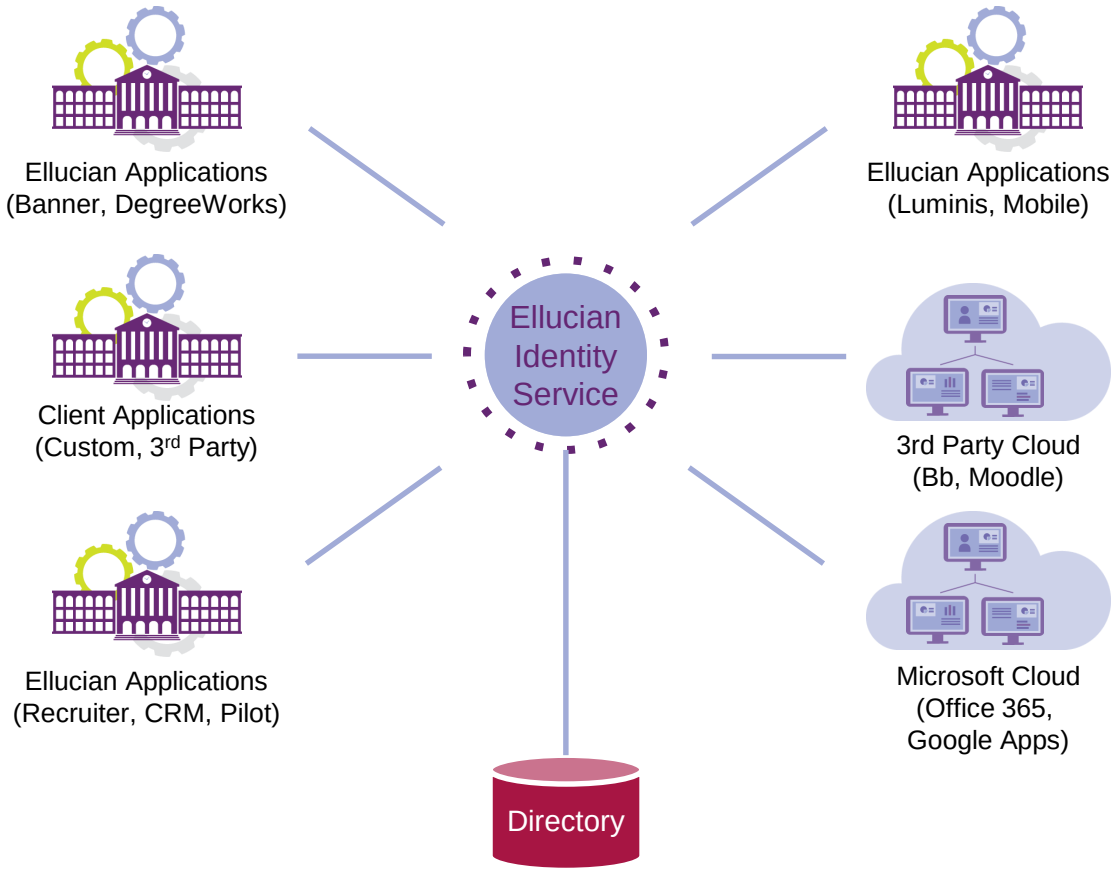
Identity Management – Possible Scenario



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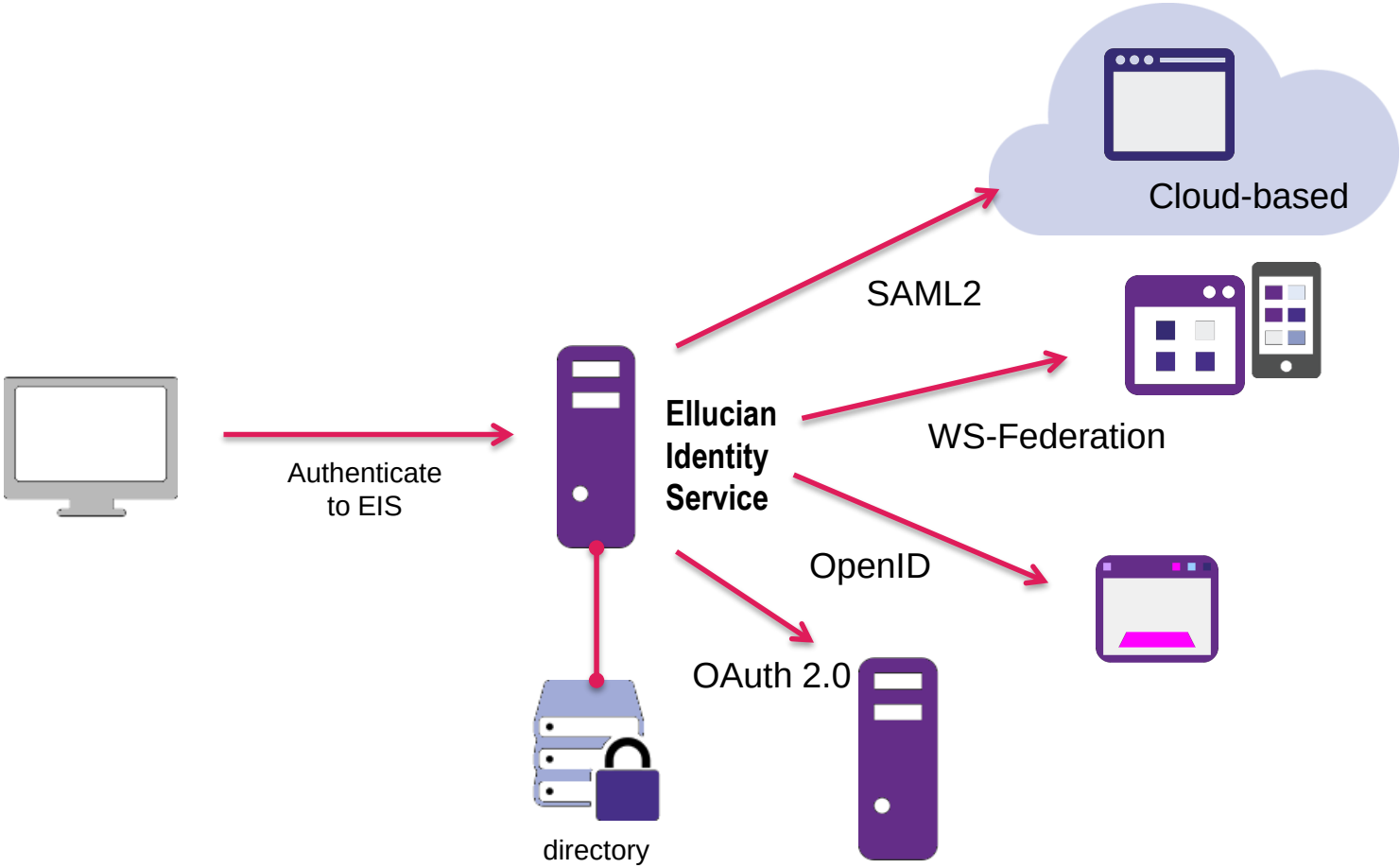
Centralised Authentication, Multiple Protocols



How this relates to Irish HE Sector

Ellucian Identity Services

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Irish HE Sector

National Strategy for Higher Education to 2030

Report of the Strategy Group
January 2011

Hunt Report "system-wide collaboration between diverse institutions"

The challenges and opportunities presented by technological advances are under active consideration in higher education systems across the developed and developing world. In the words of one commentator:

> *Technology is at the heart of this story of institutional change. Universities are now just one source among many for ideas, knowledge and innovation, that seems to threaten their core position and role, but in this new world of learning and research, there are also great opportunities.*
>
> *The internet, social networks, collaborative online tools that allow people to work together more easily, and open access to content are both the cause of change for universities, and a tool with which they can respond.* [62]

Peter Bradwell The Edgeless University – Why Higher Education must Embrace Technology London: Demos 2009, p.8

Education and Training Sector

Shared Services Plan 2014 - 2016

DEPARTMENT OF EDUCATION AND SKILLS

Shared services, external service delivery and procurement are identified as enablers for the overall objectives for the higher education sector including the work on future funding policy for the sector.

HEDM, iHub and EIS

- Facilitate shared services
- Provide access to content locally, across institutions and in the cloud
- Make available the primary credential for all federated services
- Explore connection with HeaNET Edugate federation similar to work being envisioned for InCommon in USA

Questions?

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