Process to Define Conceptual Target State

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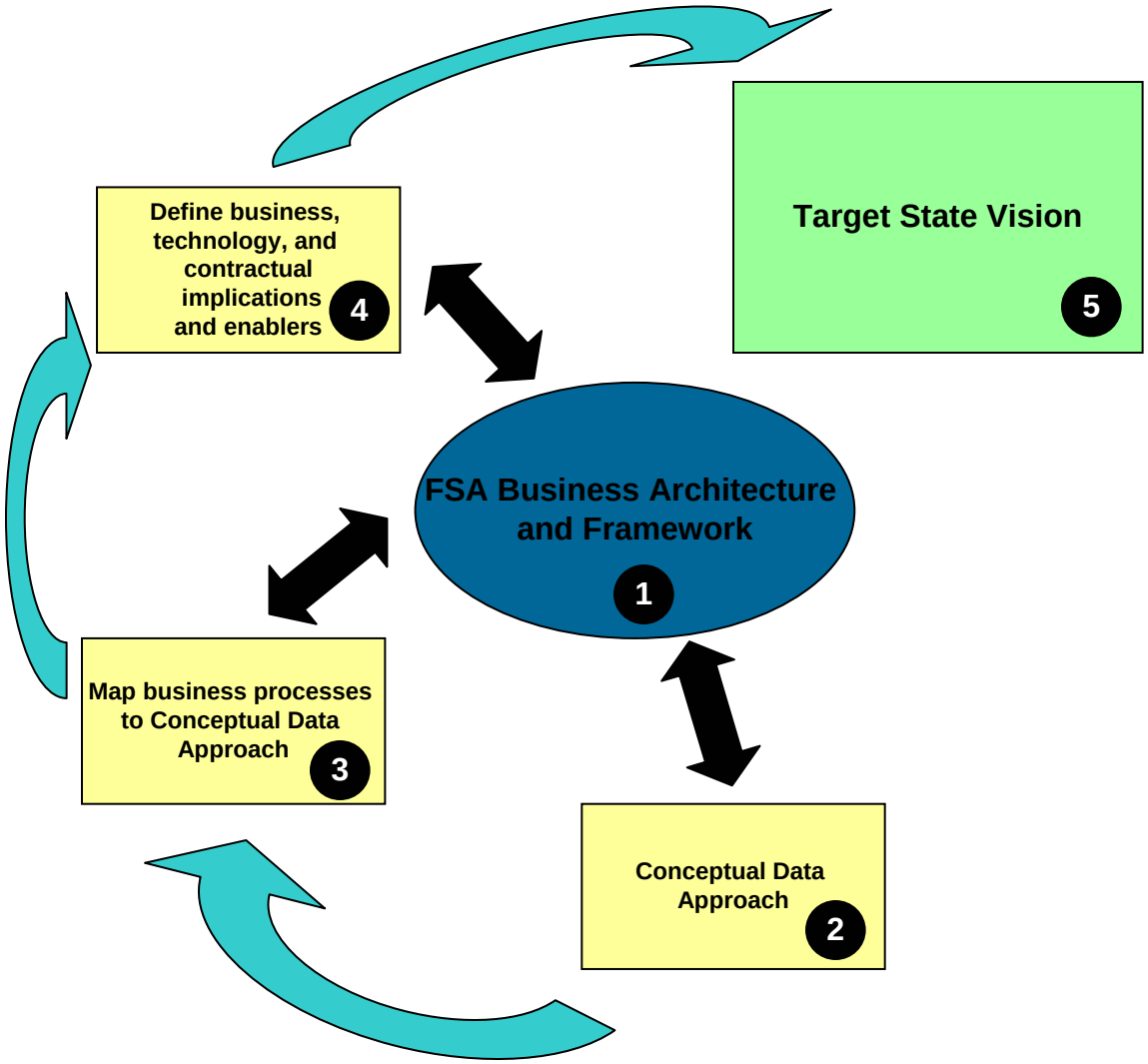

1. ✓ Define business objectives and business capabilities and align them to the associated business processes
   - As-Is Data Flows
   - FSA Vision Framework (business objectives) created with the BIG
   - FSA Business Architecture (business functions) created with the BIG
2. ✓ Create a conceptual data approach
   - Review of four options all beginning with data
3. Map business processes to the conceptual design approach
   - Link the business architecture to the data
4. Define the interaction of business processes and data
   - Business, technology, and contractual implications and enablers
   - Define technology approach to supporting business needs
5. Establish the Target State Vision and Sequencing Plan

Data Integration Strategy

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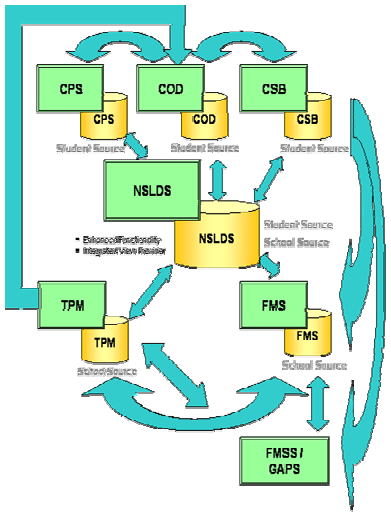
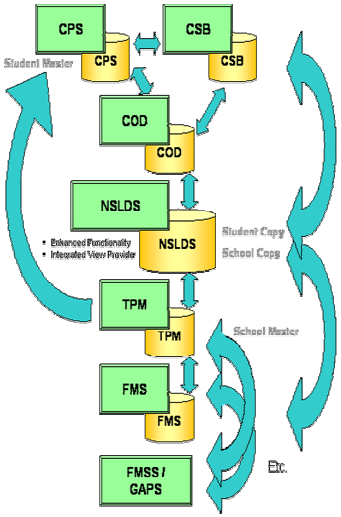
Determine overall Data Integration Strategy by considering a Business Process and Data Integration Continuum.

Business:	**System Focused**	**Business Process Focused**
		Target
Data:	**Unique**	**Integrated**
Cost:	**Implement Lower, Operate Higher**	**Implement Higher, Operate Lower**

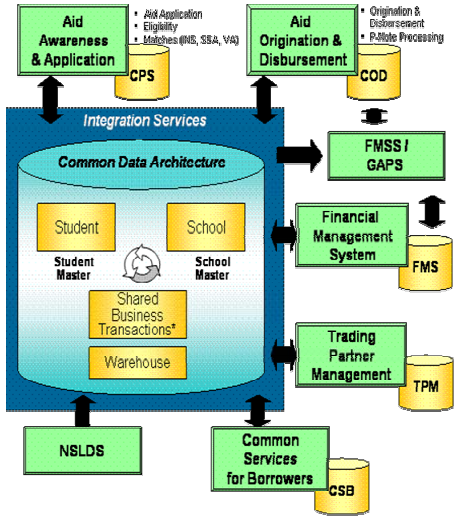
Stand Alone



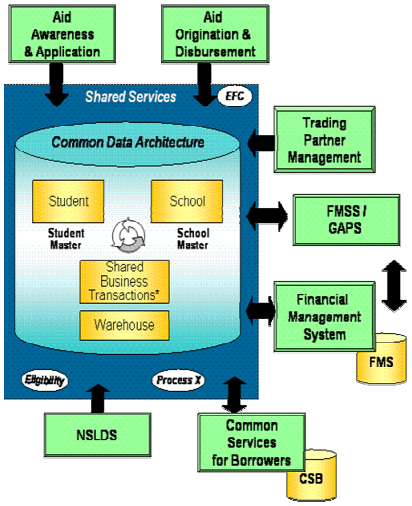
Common Data



Shared Source



Common Access



Features

Independent solutions

No automated sharing of information

Sharing only possible through one-off efforts to integrate for analysis & research

Independent solutions

Sharing of information for analytical purposes in transactional system acting as a warehouse

Enterprise data, metadata, and business rules integrated in one database

Business process and application workflow centrally controlled

Operational Data Store (ODS) used to feed DW

Common data and methods shared via Data Access Objects (DAO) or Web service

Single System Integrated Application Suite and Data

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Option A – Stand Alone - Multiple Transactional Systems with Multiple School and Student Sources

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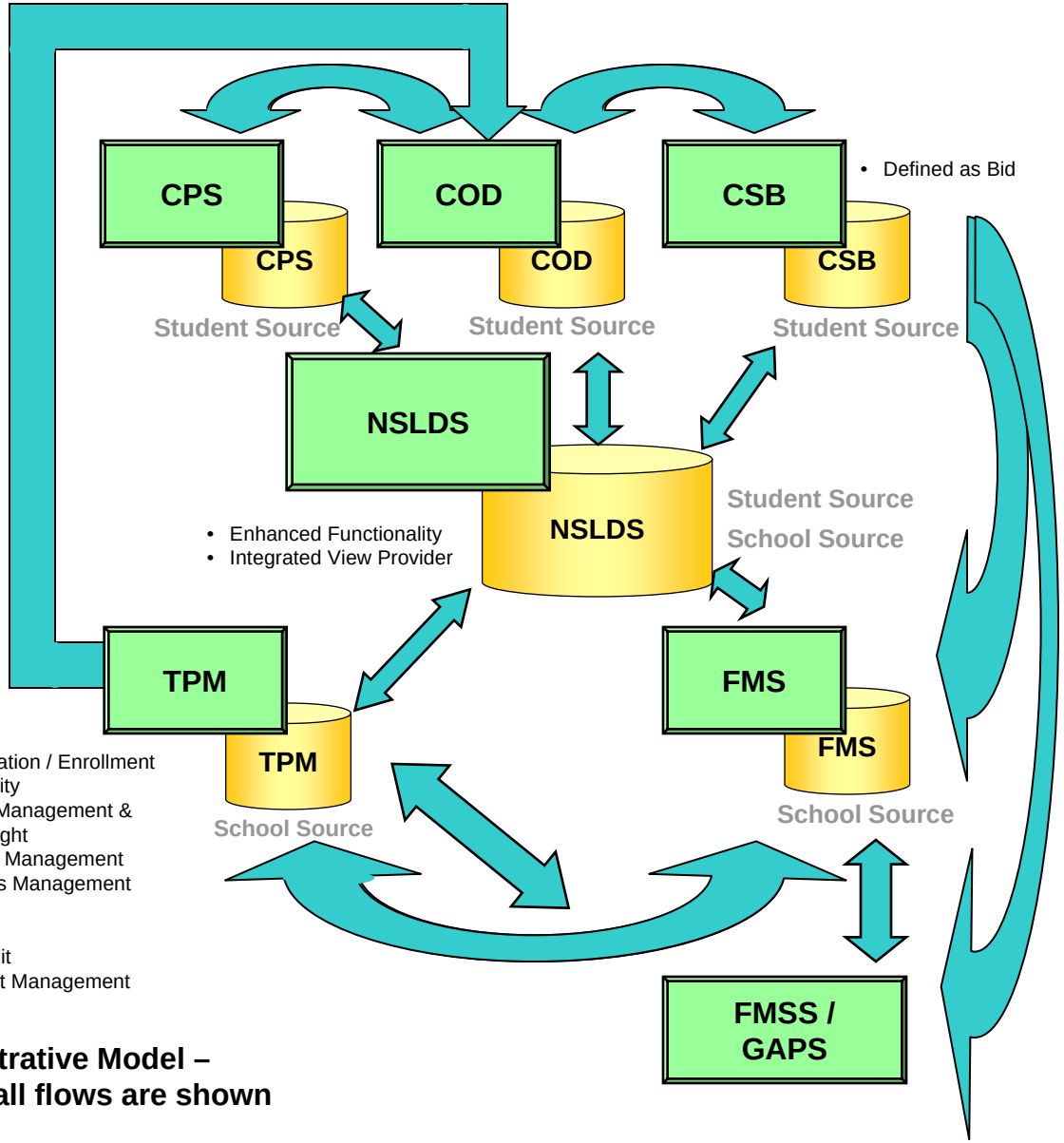

- Application / Enrollment
- Eligibility
- Case Management & Oversight
- Profile Management
- Access Management
- RID
- eAPP
- eZAudit
- Default Management

Illustrative Model – not all flows are shown

Key Features

- Each application system maintains its own data store
- Data synchronized using forced updates between all systems
- NSLDS is the only program wide analytics provider
- NSLDS provides Integrated Views
- Permutations include a waterfall approach to consolidating student transactional systems (Student starts at CPS, or at COD, or at CSB, or at NSLDS – updates in both chronological directions)

Pros

- Smallest Change, Lowest Risk Implementation

Cons

- Lack of single source for data – lots of redundancy
- Synchronization presents technical challenge
- Promotes data and processing silos
- Data still organized by system, not by process

Option B – Common Data - Multiple Transactional Systems with Single School and Student Source

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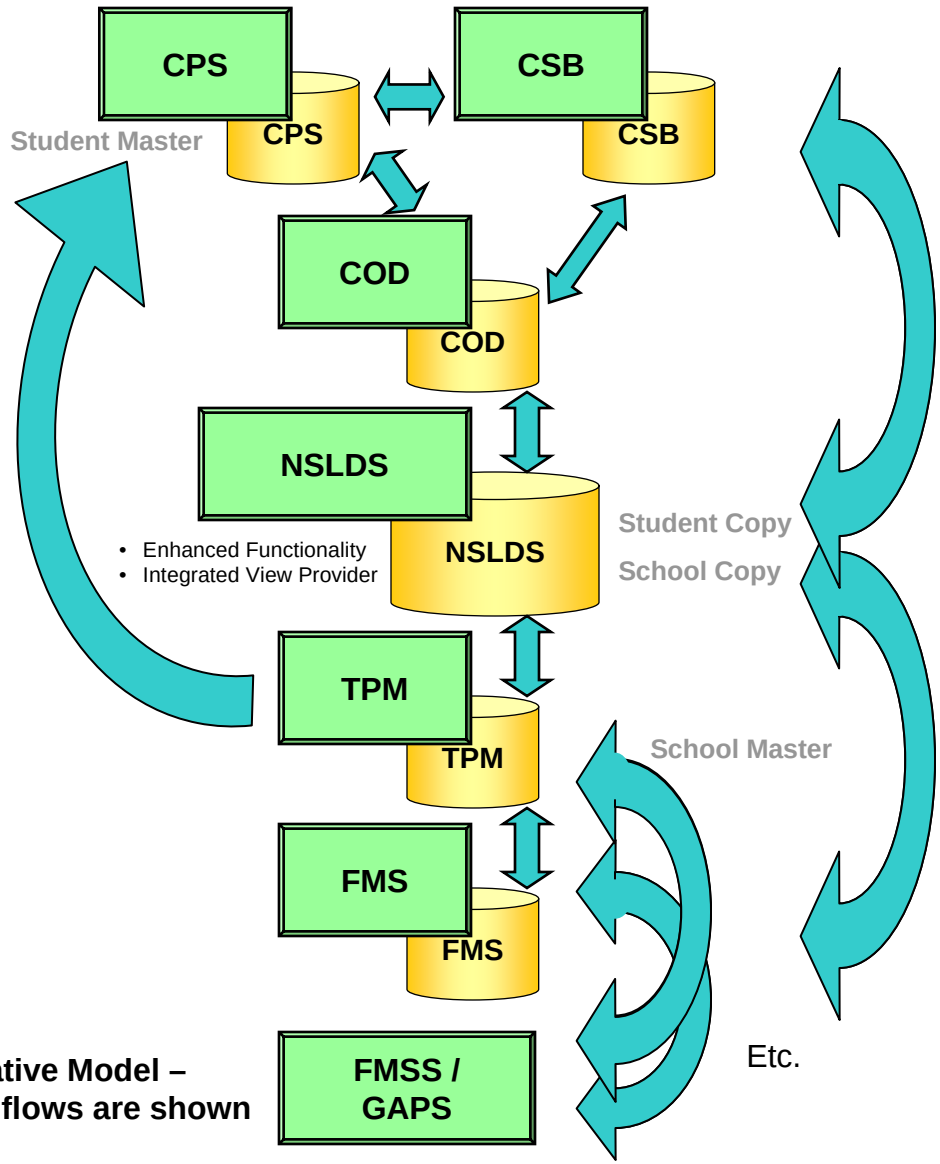

Illustrative Model – not all flows are shown

Key Features

- CPS receives student demographic data via FAFSA and creates student record.
- IPM is the primary steward of the school record
- NSLDS functionality grows larger and continues to provide the only option for program wide analytics
- NSLDS provides Integrated Views
- CPS, COD,CSB and NSLDS are all candidates for single Student Master

Pros

- Single steward for key data elements

Cons

- Data still organized by system, not by process
- Still lots of redundancy
- Not aligned with chronology, or business processes

Option C – Shared Source – Multiple Transactional Systems with Centralized School and Student Stores

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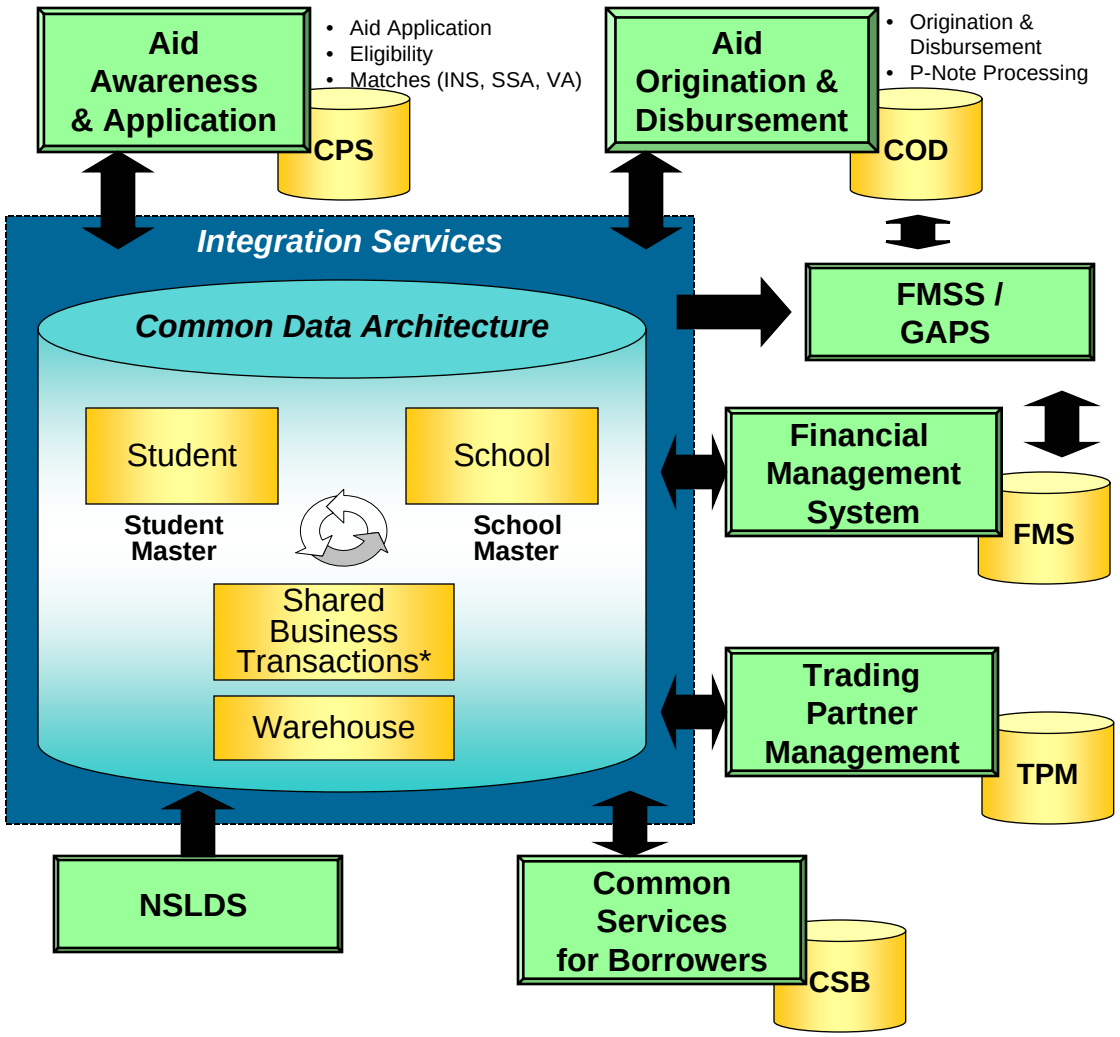

* This Business Transaction store will grow as progression toward Option D is made. However, at first this store will be limited as many transactions will remain in the business area specific databases

Illustrative Model – not all flows are shown

Key Features

- All applications use the centralized student and school data stores, but retain system specific data
- Systems perform business logic relevant to their lifecycle stage and maintain common stores (e.g. CPS is strictly application processor, COD performs O&D, etc.)
- Key business processes rely on single source of student and school data
- CSB and FMS continue to act as separate transactional system, updating historical store and warehouse

Pros

- Single steward for key data elements
- Establishes Historical Data Store for cross program analytics
- Enables real-time Integrated Views
- Enables Shared Services
- Makes the implementation of Integrated Customer Service easier

Cons

- Application stores still need to reconcile with Student Store
- Performance Risk with single version of student / school data

Option D – Common Access – Process Reengineering to enable a Centralized Operational and Historical Warehouse

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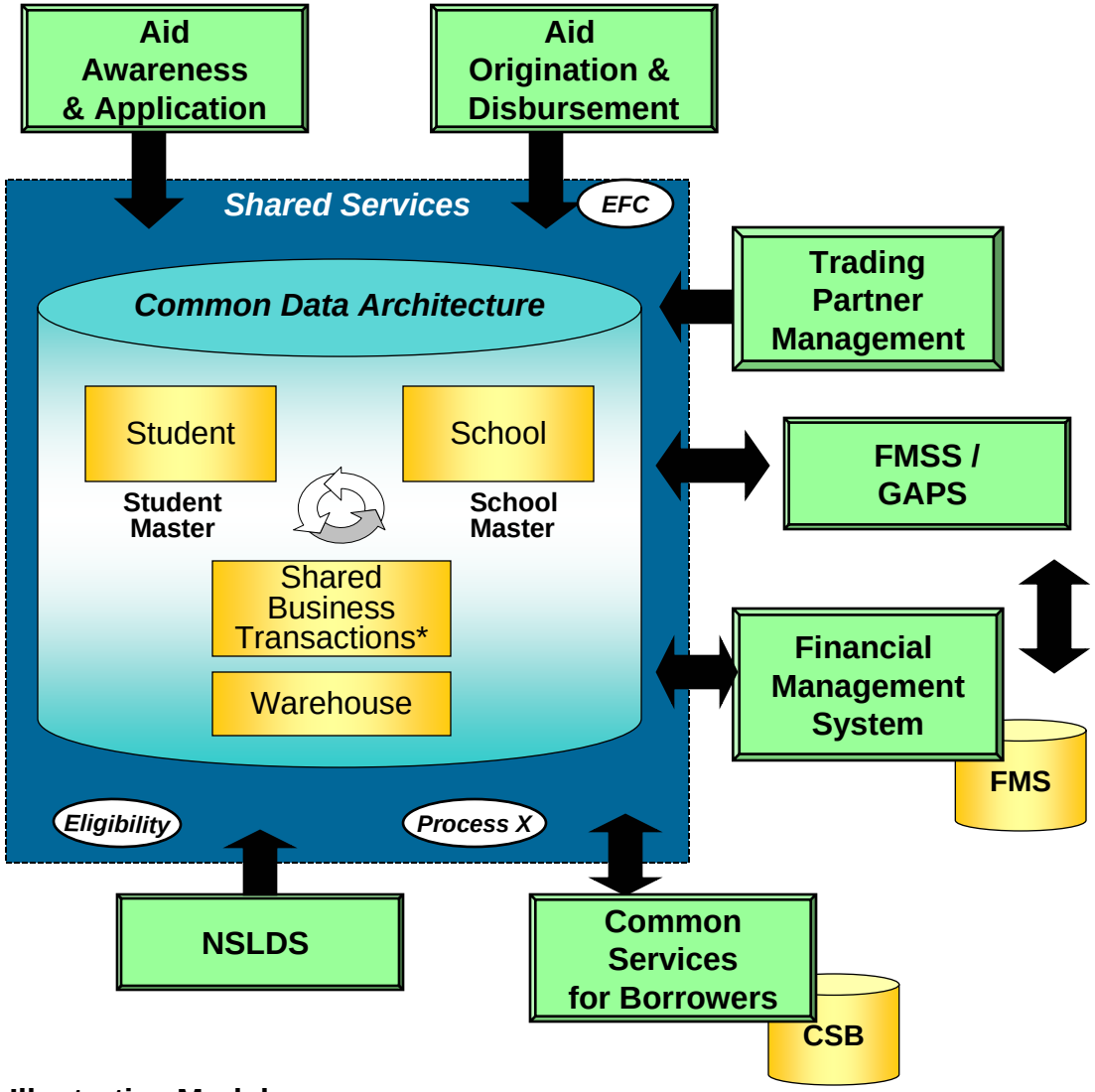

Illustrative Model – not all flows are shown

Key Features

- Operational data store model – All front-end functions share common source of data
- Systems retain very little to no data that is not commonly maintained in a shared database
- Service Oriented access to operational data, real time access to data as needed by process
- CSB and FMS continue to act as separate transactional system, updating historical store and warehouse

Pros

- Same as Option C
- No need for data reconciliation – only one data instance
- Business Logic is shared, reducing maintenance

Cons

- Same as Option C
- Long time to realization presents high risk
- Current Batch nature of workload makes technical architecture tenuous