

## Chapter 2: Three Basic Architectures

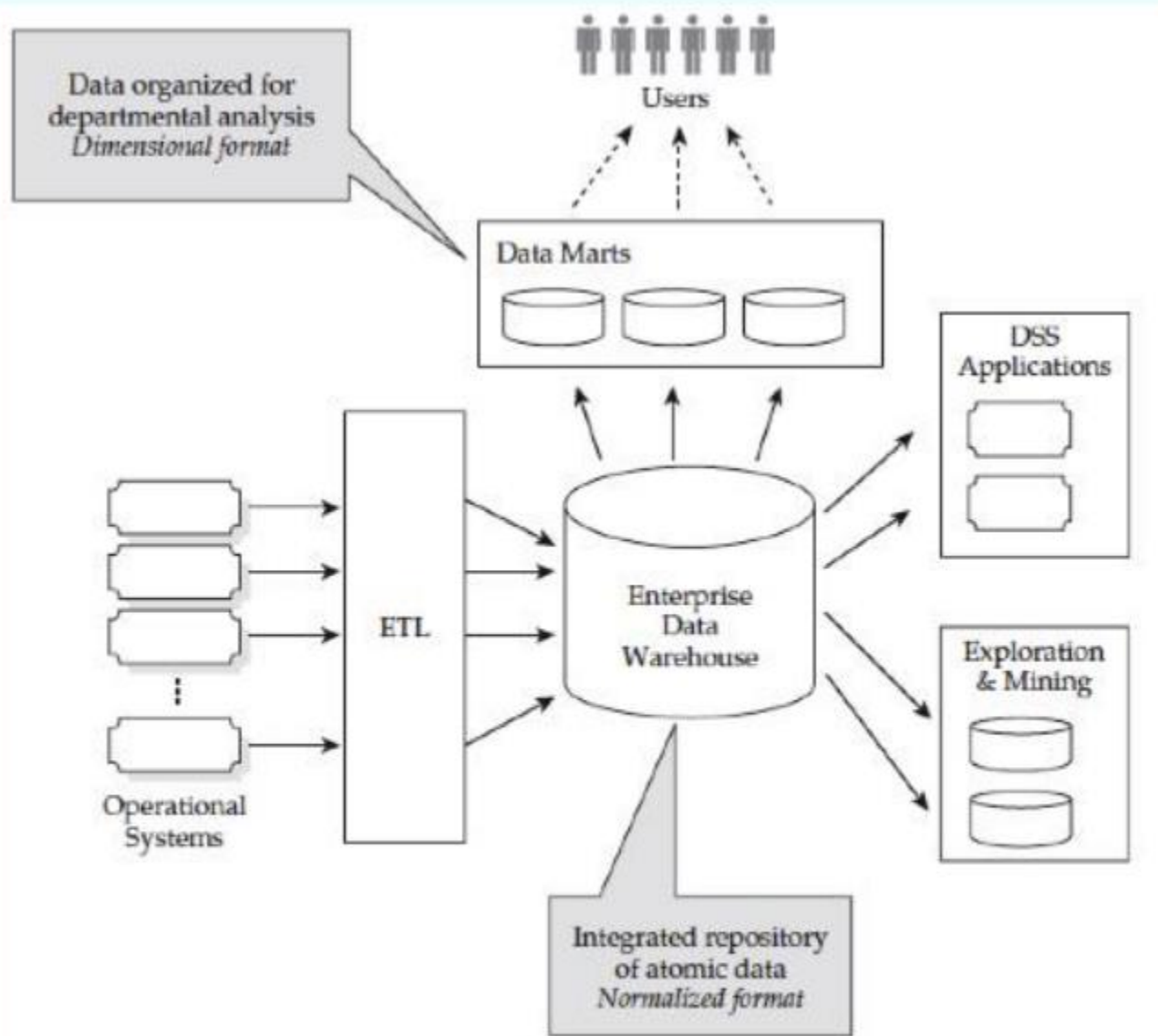
Corporate Information Factory

Dimensional Data Warehouse

Stand-alone Data Marts

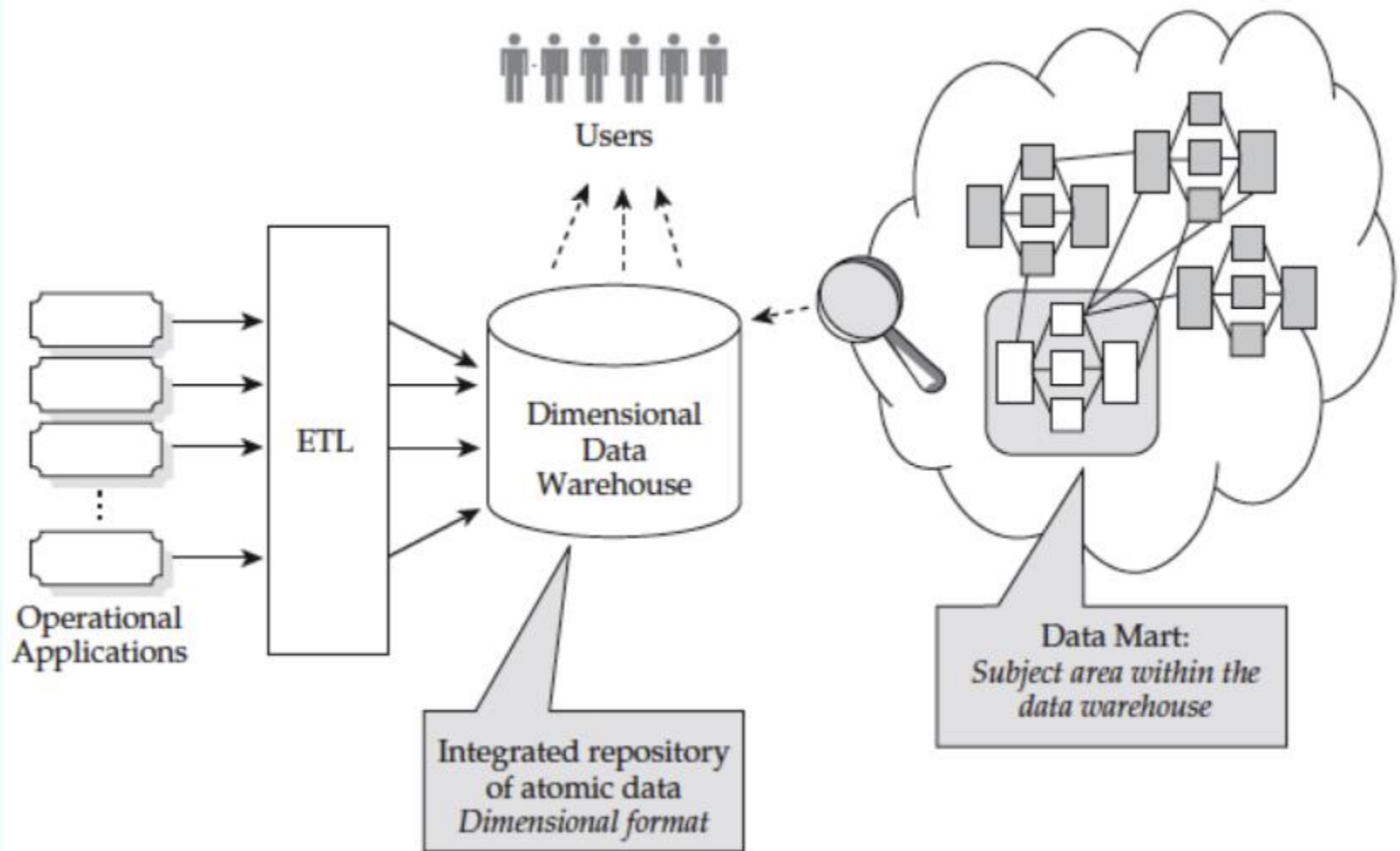
The main points of Ch 2 are

- In practice there are 3 general warehousing architectures
  - The book does not indicate pros/cons ← stays neutral
- Star schema plays a role in each, and so its worth understanding



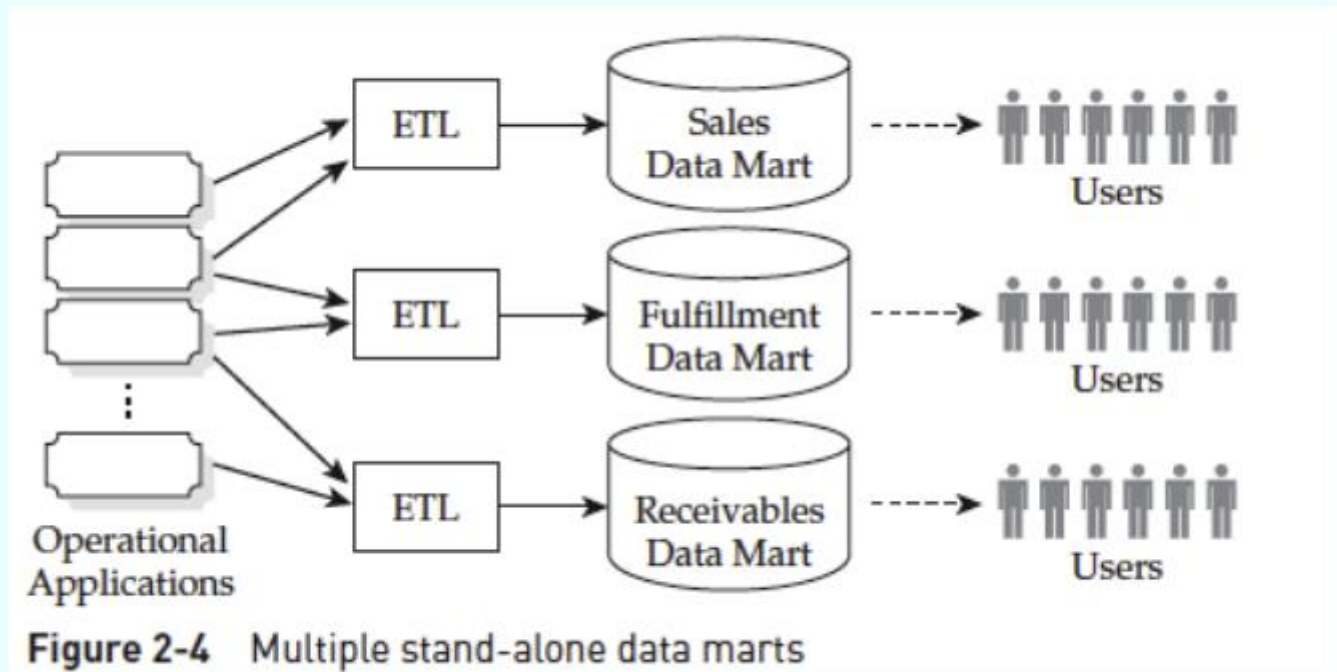
**Figure 2-1** A simplified view of W.H. Inmon's architecture: the Corporate Information Factory

# Dimensional Data Warehouse



**Figure 2-2** Ralph Kimball's data warehouse architecture: the dimensional data warehouse

## Stand-alone data marts



## Bill Inmon and Ralph Kimball are well-known individuals

Architecture	Advocate	Also Known As	Description	Role of Dimensional Design
Corporate Information Factory	Bill Inmon	<ul style="list-style-type: none"><li>• Atomic data warehouse</li><li>• Enterprise data warehouse</li></ul>	<ul style="list-style-type: none"><li>• <i>Enterprise data warehouse</i> component is an integrated repository of atomic data</li><li>• It is <i>not</i> accessed directly</li><li>• <i>Data marts</i> reorganize data for departmental use/analysis</li></ul>	Dimensional design used for data marts only
Dimensional Data Warehouse	Ralph Kimball	<ul style="list-style-type: none"><li>• Enterprise data warehouse</li><li>• Bus architecture</li><li>• Architected data marts</li><li>• Virtual data marts</li></ul>	<ul style="list-style-type: none"><li>• <i>Dimensional data warehouse</i> is an integrated repository of atomic data</li><li>• It may be accessed directly</li><li>• Subject areas within the dimensional data warehouse sometimes called <i>data marts</i></li><li>• Data marts not required to be separate databases</li></ul>	All data is organized dimensionally
Stand-Alone Data Marts	No takers, yet common	<ul style="list-style-type: none"><li>• Data mart</li><li>• Silo</li><li>• Stovepipe</li><li>• Island</li></ul>	<ul style="list-style-type: none"><li>• Subject area implementation without an enterprise context</li></ul>	May employ dimensional design

Figure 2-5 Three data warehouse architectures

	Enterprise Level			Subject Area Level		
	Integrated Repository of Atomic Data	Format	Direct Access	Data Marts	Format	Direct Access
Corporate Information Factory	✓	3NF	No	Physical	Dimensional*	Yes
Dimensional Data Warehouse	✓	Dimensional	Yes*	Logical*	Dimensional	Yes
Stand-Alone Data Marts	×	<i>n/a</i>	<i>n/a</i>	Physical	Dimensional*	Yes

\* Optional

**Figure 2-6** Characteristics of each architecture