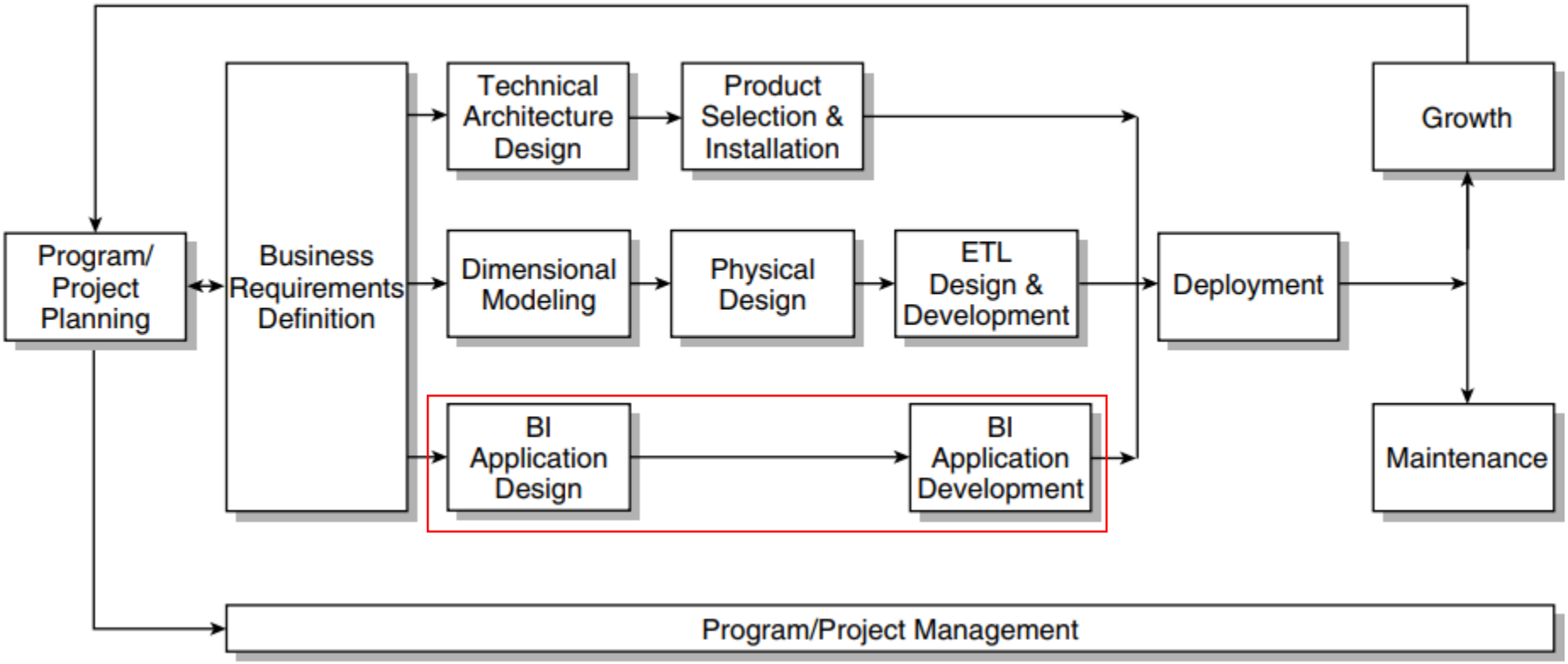
Data Warehousing and Business analytics

Lecture - 7

Designing and Developing Business Intelligence Applications

Business Intelligence (**BI**) Applications

The Kimball Lifecycle diagram



Designing BI applications

- ✓ Performed right after completing requirements definition
- ✓ Senior management has agreed on the top priority

BI Application Resource Planning

- ✓ Business Process Dimensional Model Descriptions
- ✓ Table and Column Descriptions
- ✓ Report Descriptions
- ✓ Additional Documentation

Main steps in designing and developing BI applications

Business Intelligence Application Resource Planning

- ✓ Role of the BI Application Developer
- ✓ Who Does the BI Applications Job?
- ✓ Lifecycle Timing

Main steps in designing and developing BI applications

Business Intelligence Application Specification

- ✓ Create Application Standards and Templates
- ✓ Determine the Initial Application Set
- ✓ Develop Detailed Application Specifications
- ✓ Design the Navigation Framework and Portal
- ✓ Review with the Business
- ✓ Prepare for Application Development
- ✓ Build the Applications
- ✓ Test and Verify the Applications and Data
- ✓ Complete the Documentation
- ✓ Plan for Deployment

Core Documentation

- ✓ Business Process Dimensional Model Descriptions
- ✓ Table and Column Descriptions
- ✓ Report Descriptions
- ✓ Additional Documentation

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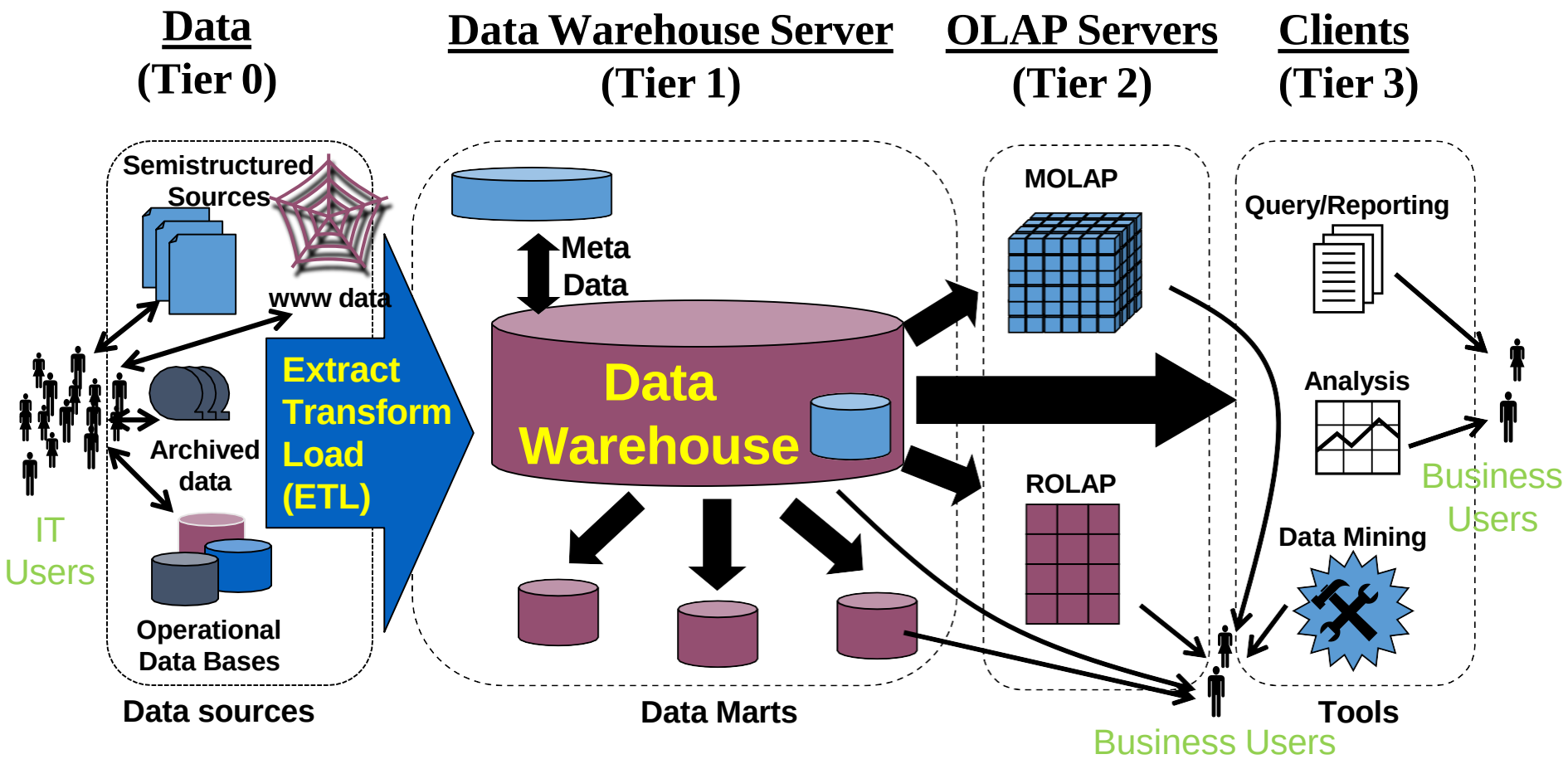
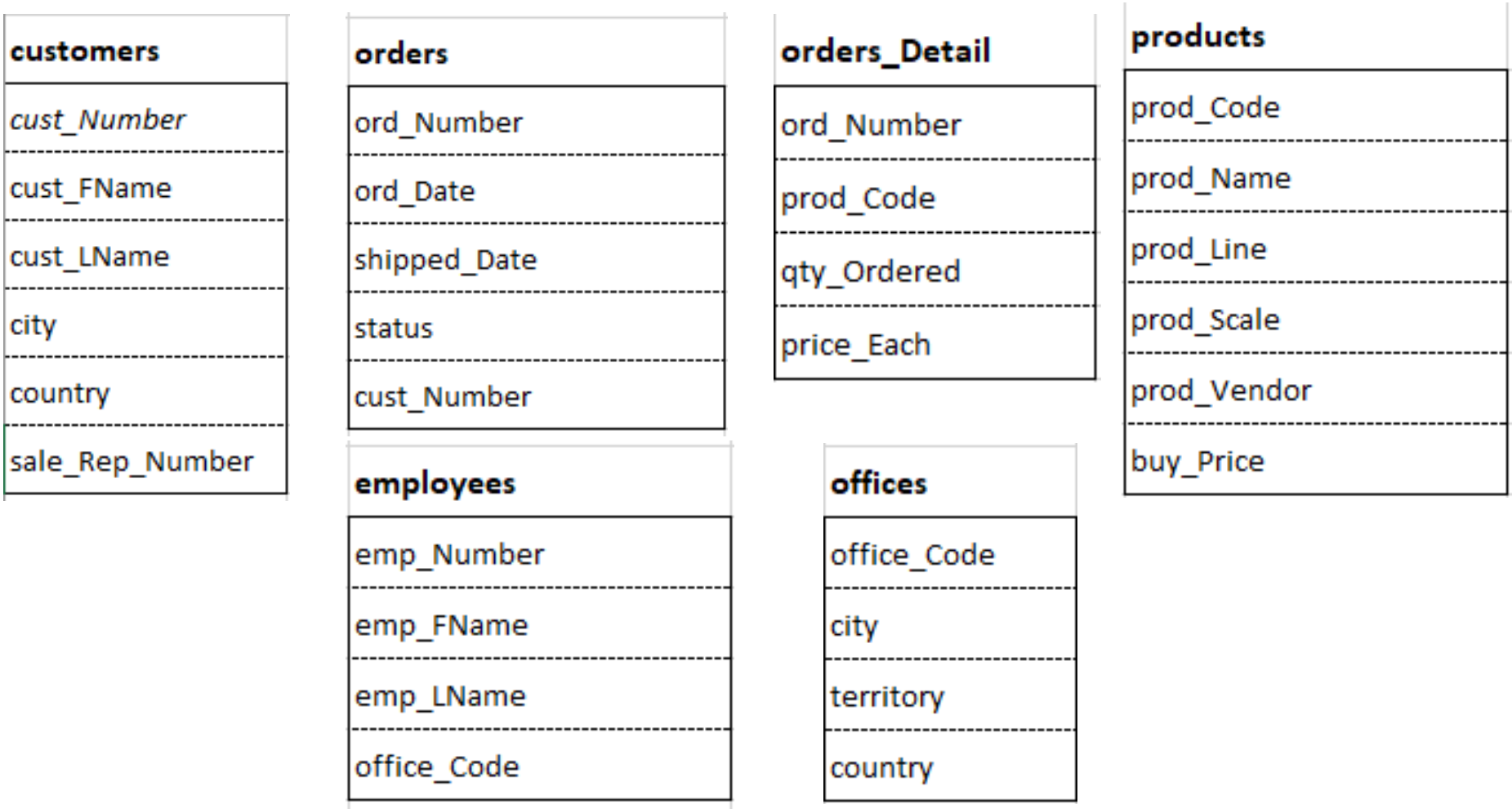
Putting the pieces together



Building OLAP model from OLTP model

Given an OLTP model including following tables



Create OLAP model from this OLTP model

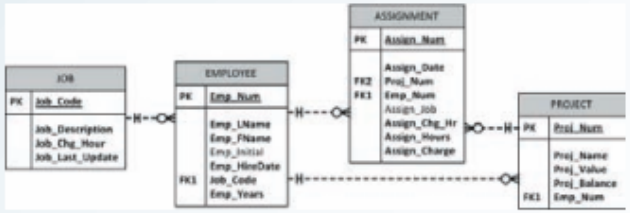
Building OLAP model from OLTP model

- Create dimension tables
- Create fact tables
- Draw schema (connection diagram)

Building OLAP model from OLTP model

Example: Create OLAP model from this OLTP model

Relational diagram



Database name: Ch07_ConstructCo

Table name: JOB

JOB_CODE	JOB_DESCRIPTION	JOB_CHG_HOUR	JOB_LAST_UPDATE
500	Programmer	35.75	20-Nov-21
501	Systems Analyst	96.75	20-Nov-21
502	Database Designer	125.00	24-Mar-22
503	Electrical Engineer	84.50	20-Nov-21
504	Mechanical Engineer	67.90	20-Nov-21
505	Civil Engineer	55.78	20-Nov-21
506	Clerical Support	26.87	20-Nov-21
507	DSS Analyst	45.95	20-Nov-21
508	Applications Designer	48.10	24-Mar-22
509	Bio Technician	34.55	20-Nov-21
510	General Support	18.36	20-Nov-21

Table name: PROJECT

PROJ_NUM	PROJ_NAME	PROJ_VALUE	PROJ_BALANCE	EMP_NUM
15	Evergreen	1453500.00	1002350.00	103
18	Amber Wave	3500500.00	2110346.00	108
22	Rolling Tide	805000.00	500345.20	102
25	Starflight	2650500.00	2309880.00	107

Table name: EMPLOYEE

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_YEARS
101	News	John	G	08-Nov-04	502	17
102	Senior	David	H	12-Jul-93	501	28
103	Arbough	June	E	01-Dec-00	500	21
104	Ramoras	Anne	K	15-Nov-91	501	30
105	Johnson	Alice	K	01-Feb-97	502	25
106	Smithfield	William		22-Jun-08	500	13
107	Alonzo	Maria	D	10-Oct-97	500	24
108	Washington	Ralph	B	22-Aug-95	501	26
109	Smith	Larry	W	18-Jul-01	501	20
110	Olenko	Gerald	A	11-Dec-99	505	22
111	Wabash	Geoff	B	04-Apr-95	506	27
112	Smithson	Darlene	M	23-Oct-98	507	23
113	Joenbrood	Delbert	K	15-Nov-00	508	21
114	Jones	Annelise		20-Aug-97	508	24
115	Bawangi	Travis	B	25-Jan-96	501	26
116	Pratt	Gerald	L	05-Mar-01	510	21
117	Williamson	Angie	H	19-Jun-00	509	21
118	Frommer	James	J	04-Jan-09	510	13

Table name: ASSIGNMENT

ASSIGN_NUM	ASSIGN_DATE	PROJ_NUM	EMP_NUM	ASSIGN_JOB	ASSIGN_CHG_HR	ASSIGN_HOURS	ASSIGN_CHARGE
1001	22-Mar-22	18	103	503	84.50	3.5	295.75
1002	22-Mar-22	22	117	509	34.55	4.2	145.11
1003	22-Mar-22	18	117	509	34.55	2.0	69.10
1004	22-Mar-22	18	103	503	84.50	5.9	498.55
1005	22-Mar-22	25	108	501	96.75	2.2	212.85
1006	22-Mar-22	22	104	501	96.75	4.2	406.35
1007	22-Mar-22	25	113	508	50.75	3.8	192.85
1008	22-Mar-22	18	103	503	84.50	0.9	76.05
1009	23-Mar-22	15	115	501	96.75	5.6	541.80
1010	23-Mar-22	15	117	509	34.55	2.4	82.92
1011	23-Mar-22	25	105	502	105.00	4.3	451.50
1012	23-Mar-22	18	108	501	96.75	3.4	328.95
1013	23-Mar-22	25	115	501	96.75	2.0	193.50
1014	23-Mar-22	22	104	501	96.75	2.8	270.90
1015	23-Mar-22	15	103	503	84.50	6.1	515.45
1016	23-Mar-22	22	105	502	105.00	4.7	493.50
1017	23-Mar-22	18	117	509	34.55	3.8	131.29
1018	23-Mar-22	25	117	509	34.55	2.2	76.01
1019	24-Mar-22	25	104	501	110.50	4.9	541.45
1020	24-Mar-22	15	101	502	125.00	3.1	387.50
1021	24-Mar-22	22	108	501	110.50	2.7	298.35
1022	24-Mar-22	22	115	501	110.50	4.9	541.45
1023	24-Mar-22	22	105	502	125.00	3.5	437.50
1024	24-Mar-22	15	103	503	84.50	3.3	278.85
1025	24-Mar-22	18	117	509	34.55	4.2	145.11


Questions?