Avancier Methods (AM)
EA in the 11th century
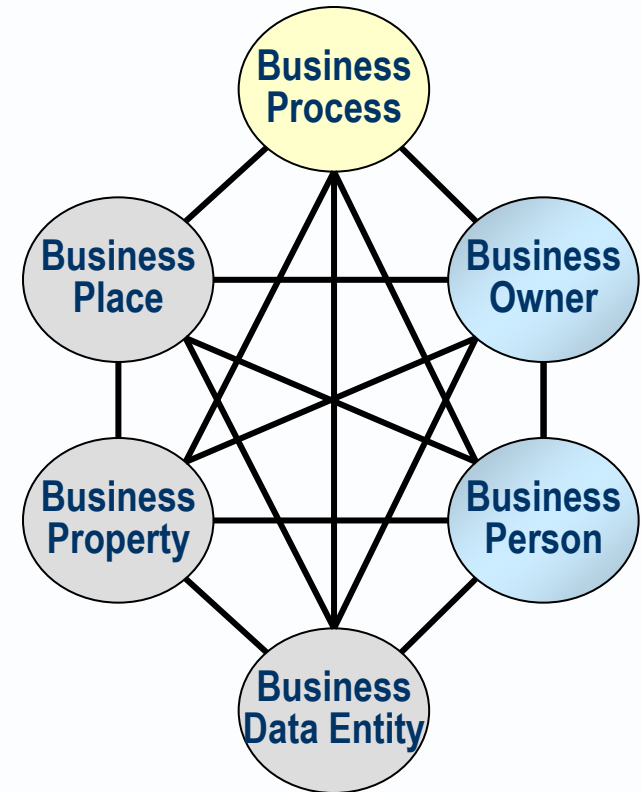
Business architecture before EA

Creative Commons Attribution-No Derivative Works Licence 2.0

See last slide for details

Business entities of interest to enterprise architects

► Business analysts attend to the definition of
  - ■ Business processes
  - ■ Business places (locations)
  - ■ Business properties (material resources)
  - ■ Business parties and people (organisations, roles and actors)
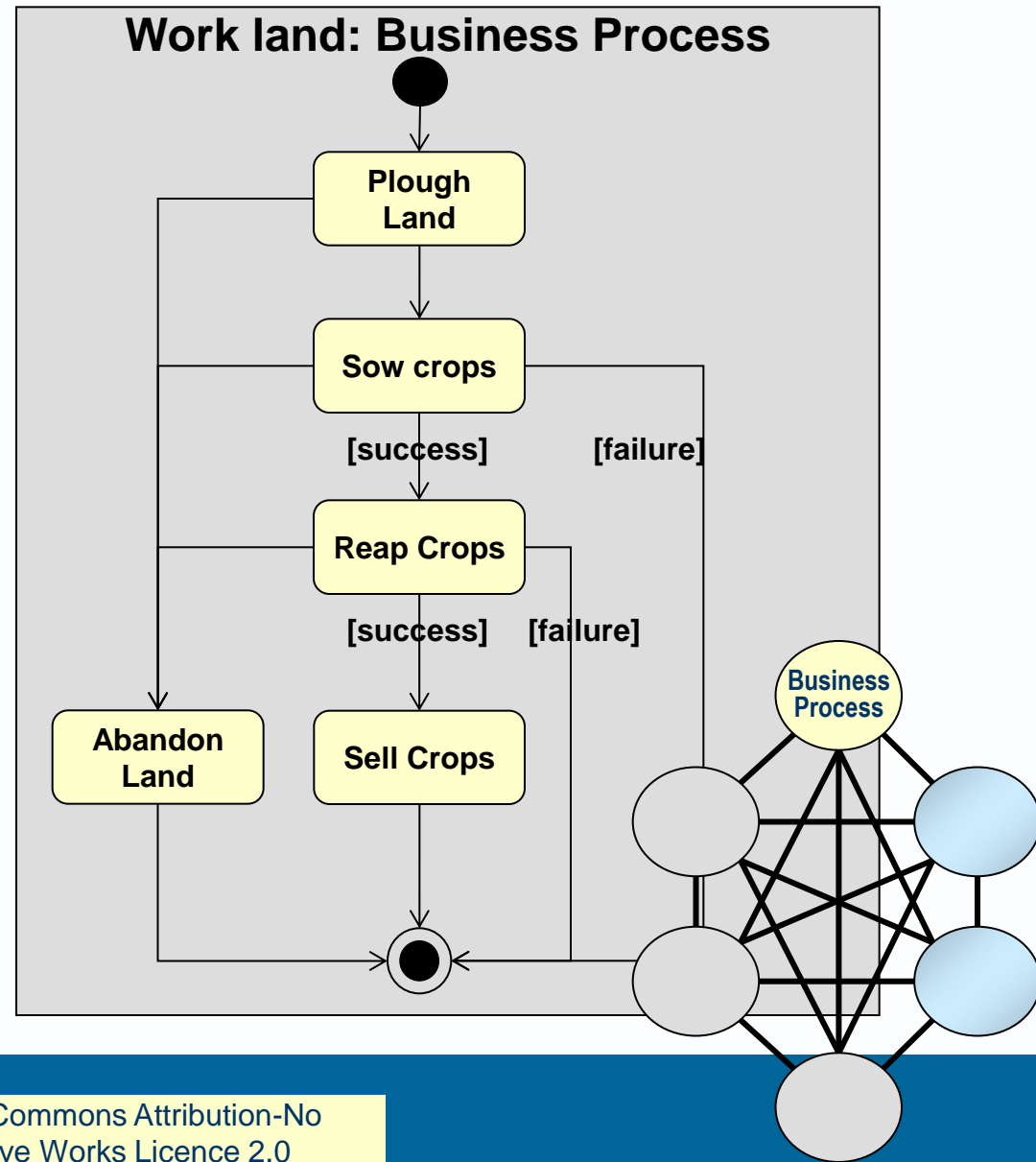 - ■ Business data entities

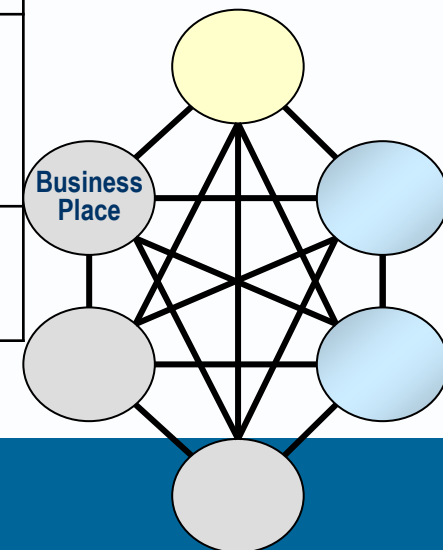► Let's go back in time and look at the business architecture of England in the 11th century

Business Process
Business Place
Business Owner
Business Property
Business Person
Business Data Entity

At the time of King Edward: 1066

► Anglo-Saxon England

► a sophisticated administrative system

► shire counties (whose boundaries survived with little change until 1974)

► a well-functioning tax system

► a database recording lands held by landholders

Business processes

► Apportion land
  ■ King grants land to chief tenants
  ■ Chief tenants grant land to sub tenants
► Work land - see chart >>>
► Return for land
  ■ Pay rent/taxes
  ■ Do work for lord of manor
  ■ Etc.

Work land: Business Process

Plough Land

Sow crops

[success]   [failure]

Reap Crops

[success]   [failure]

Abandon Land   Sell Crops

Business Process

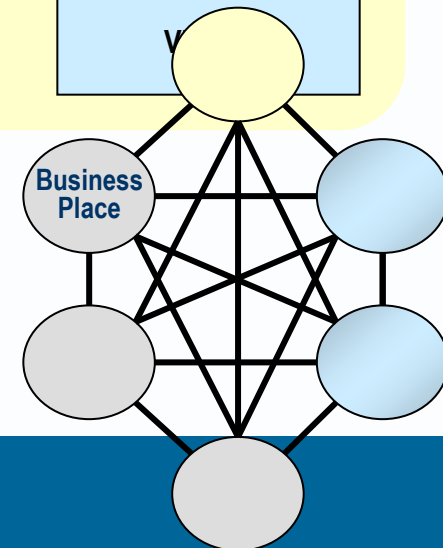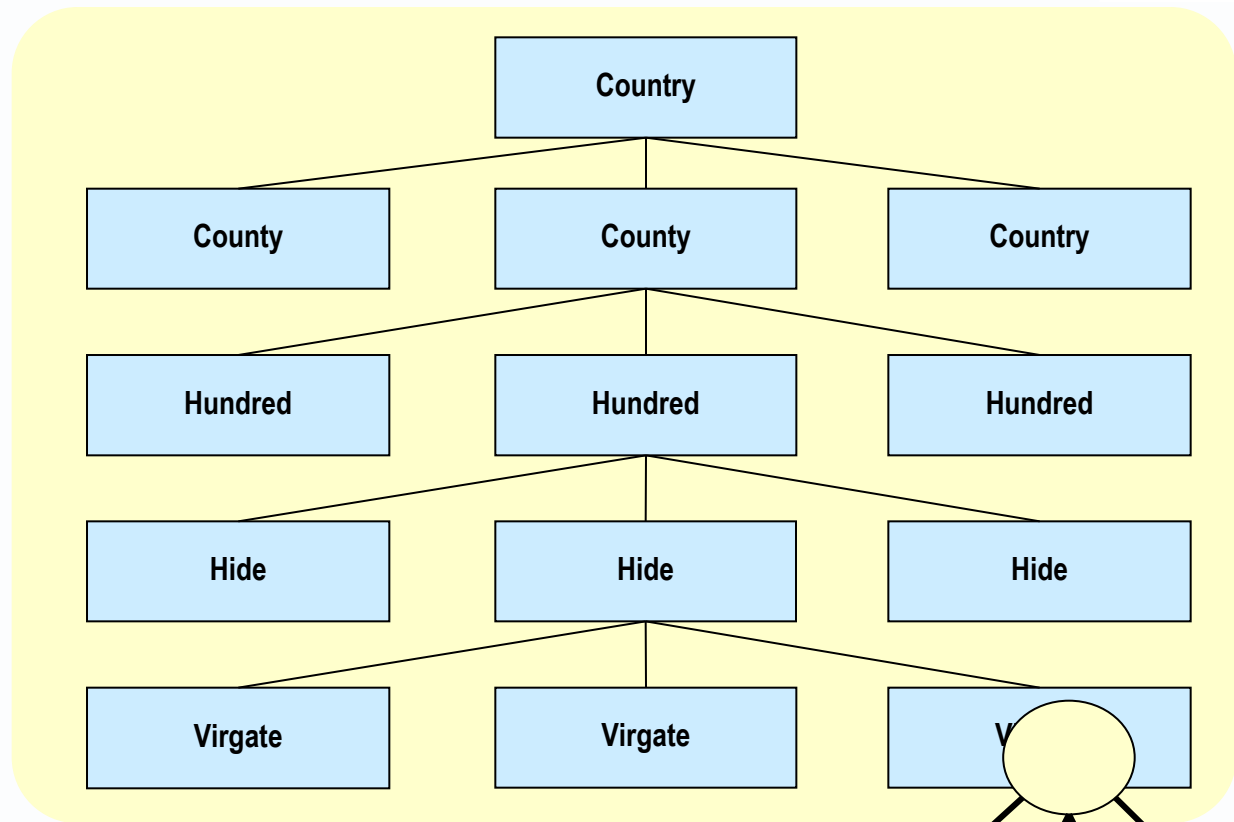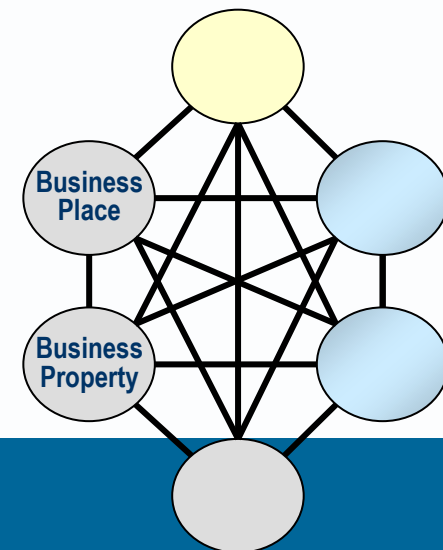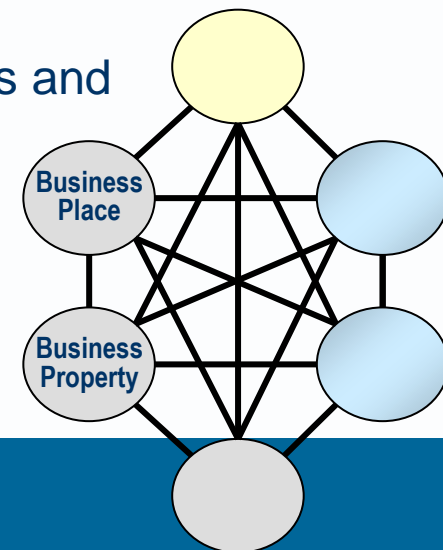| PLACES / AREAS	Facts, constraints and derivation rules
County (or shire)	A subdivision of the country
Hundred (or wapentake where Danish law and customs prevailed)	A subdivision of the county (say one tenth) used for administrative purposes (originally enough for one hundred households or hides).
Hide	A subdivision of the hundred. Roughly the amount of land that could support a household. Typically 60 to 120 acres. The unit of assessment used for tax purposes.
Virgate	A quarter of a hide. Roughly the amount of land that two oxen could plough in a single annual season (say 30 acres).
Borough (town)	An urban dwelling often fortified, with recorded markets and local customs.

Business Place

Business places: location structure

▶ The geography

▶ 112 boroughs, each probably in one hundred and spanning several hides

Country

| County | County | Country |

| Hundred | Hundred | Hundred |

| Hide | Hide | Hide |

| Virgate | Virgate | V... |

Business Place

PROPERTIES	Facts, constraints and derivation rules
Manor	An estate or unit of lordship, varying in size.
Desmene	All the land retained by a lord of the manor for his own use and support, under his own management, excluding land sub-enfeoffed by him to others as sub-tenants.
Plough(land)	The taxable amount of land that can be ploughed by a team of eight oxen. (Roughly = 1 Hide)

Business Place

Business Property

Business properties
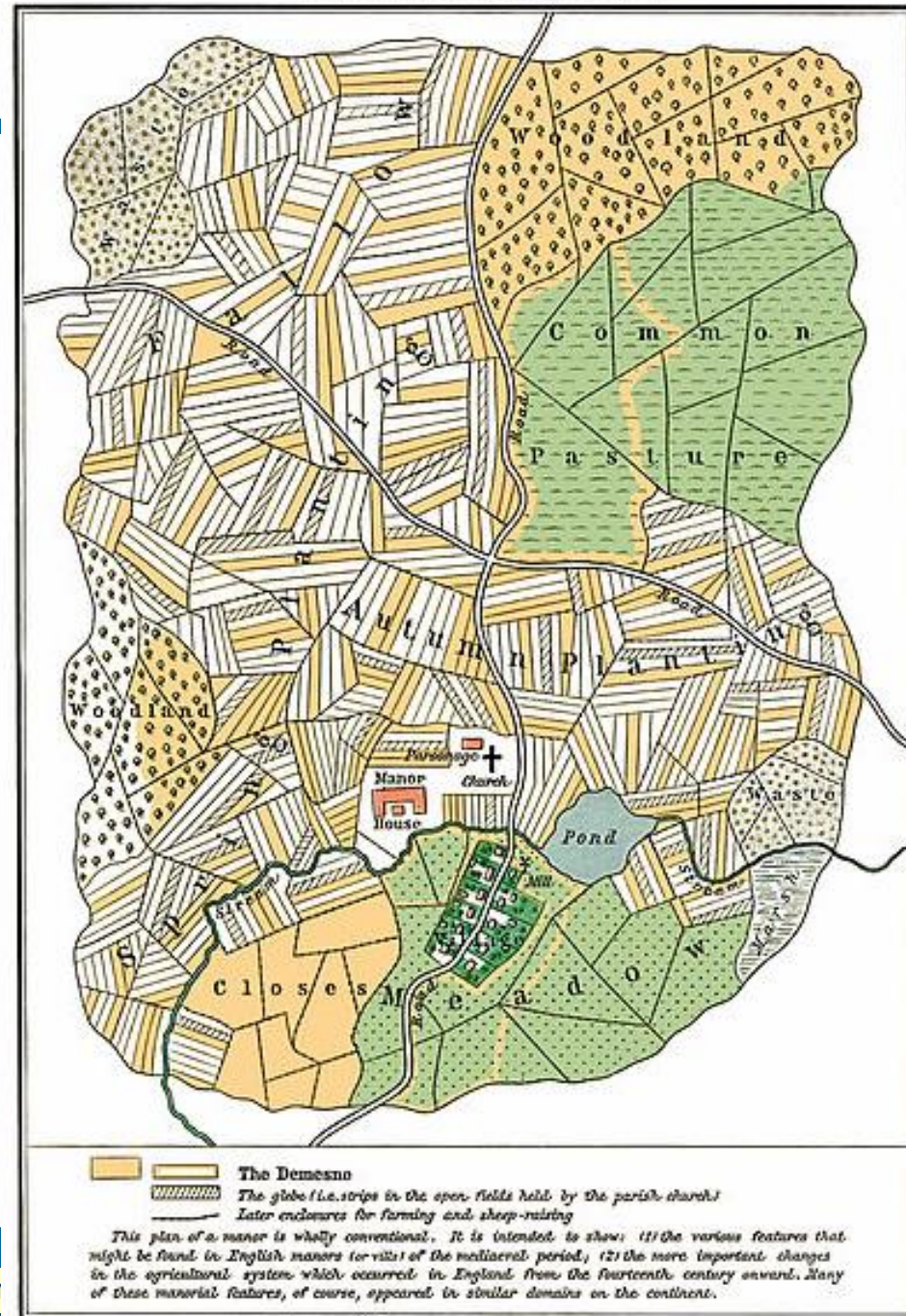
► Thousands of <u>manors</u>

► Other owned places and properties included

■ 48 castles including Windsor,

■ >60 major religious houses,

■ >300 parish churches,

■ c6,000 mills (but no windmills),

■ c45 vineyards,

■ Various woodlands,

■ Numerous markets,

■ Several mints, Inland and coastal fisheries,

■ Some industries including salt pans, lead working, quarries and potteries

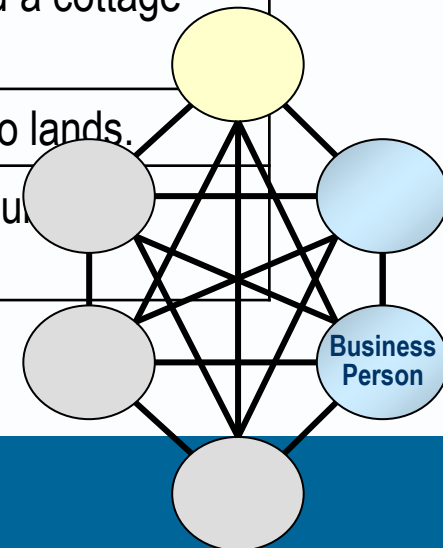**Business Place**

Business Property

One manor

► The survey was based on manors - not parishes

► This "rich picture" is in the public domain and in Wikipedia
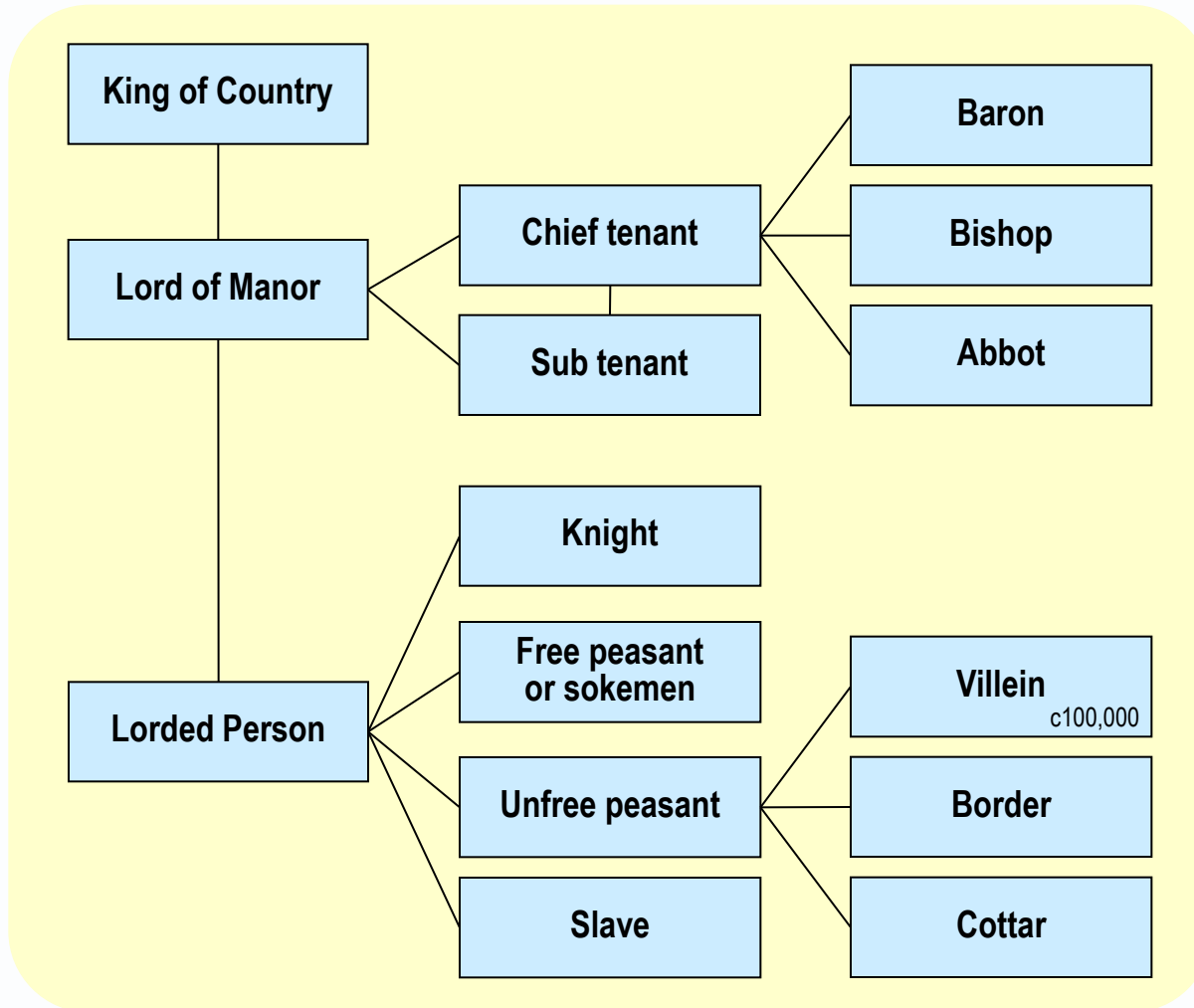

Plan of a Mediaeval Manor.

Business people

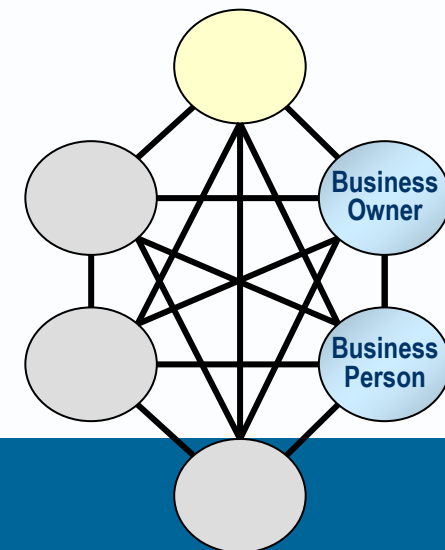| PEOPLE	Facts, constraints and derivation rules
Tenant-in-chief	Principal barons and churchmen who held land directly from the King.
Knight	A military retainer, usually a heavily armed and trained cavalryman.
Freeman	Might hold land but who owed some services to his lord.
Sokeman	Freeman who nevertheless had to attend their lord's court.
Villan	Unfree peasant who owed his lord labour rent, services (2-3 days per week) and farmed land for himself.
Bordar	Unfree peasant, <u>less land</u> than villans, owed <u>more services</u> to their lord
Cottar	Unfree peasant, less land than villans, likely <5 acres and a cottage with a vegetable garden.
Slave	Person who was the property of his or her lord and had no lands.
Burgess (townsman)	An urban dweller, usually an upper townsman, whose tenu based on a financial payment.

Business Person

Business people: organisation structure

► The feudal society's hierarchical reporting lines

```
King of Country
    |
Lord of Manor —— Chief tenant —— Baron
    |                 |         —— Bishop
    |              Sub tenant
    |                          —— Abbot
    |
    |
Lorded Person —— Knight
               —— Free peasant
                  or sokemen   —— Villein  c100,000
               —— Unfree peasant —— Border
               —— Slave          —— Cottar
```
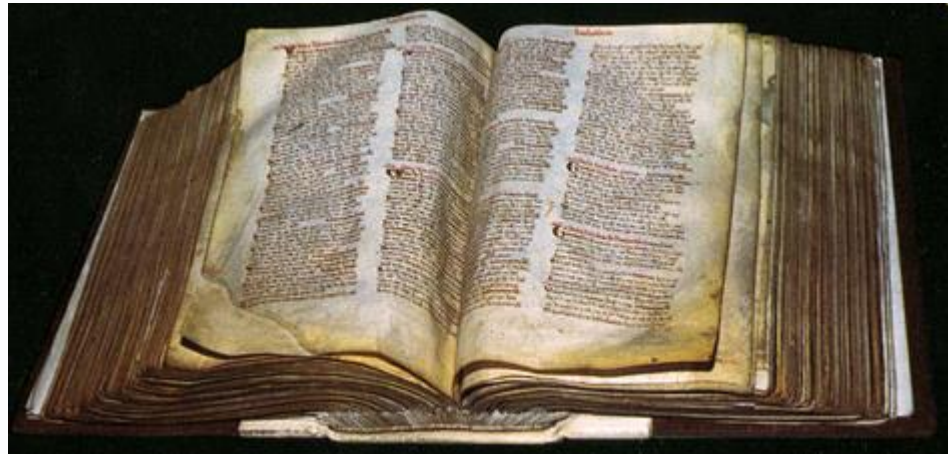
► 0.25m individuals
► 40% villeins
► the wealthiest and most numerous unfree peasants.
► held a fixed share of a manor's resources
► might have a farm of as much as 30 acres

Business Owner
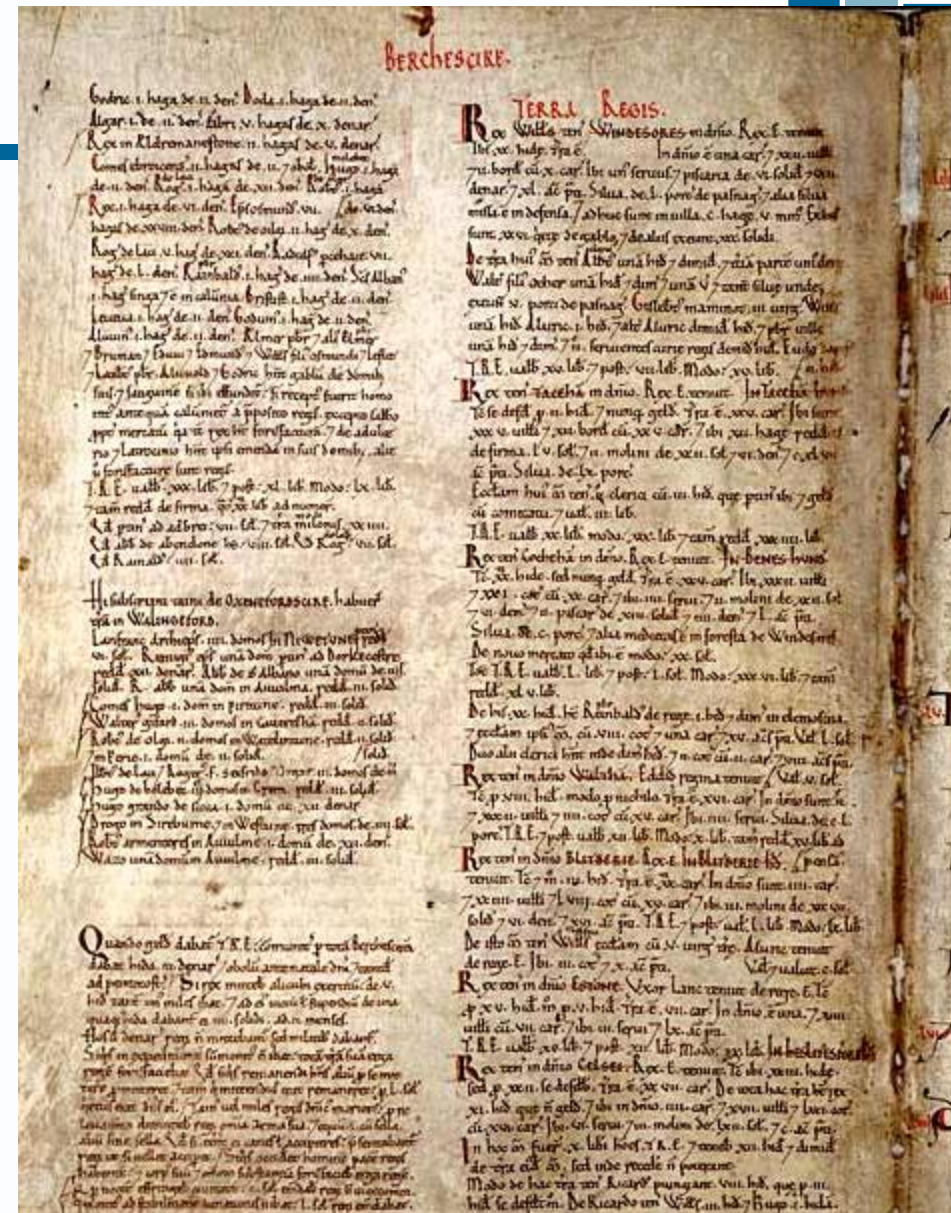
Business Person

At the time of King William: 1085

► After the Norman Conquest, King William ordered an audit to
- describe locations in England and parts of Wales.
- establish who held what land
- provide definitive proof of rights to land and
- obligations to tax and military service
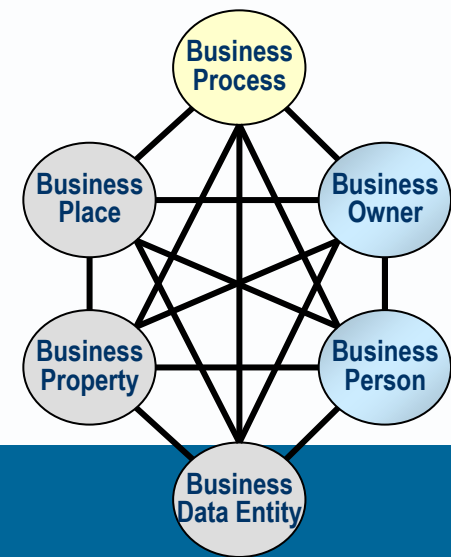
► This survey resulted in the "Domesday Book"

► http://www.nationalarchives.gov.uk/domesday/discover-domesday/great-domesday.htm

"a landmark in the triumph of the <u>centralised written record</u>"

► 913 pages

► 2,000,000 Latin words

► "So very narrowly did he [William] have it investigated that there was no single hide nor yard of land, nor indeed ... one ox or cow or pig which was left out and not put down in his record"

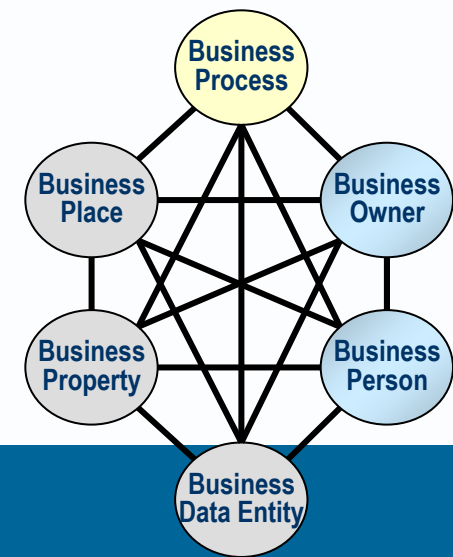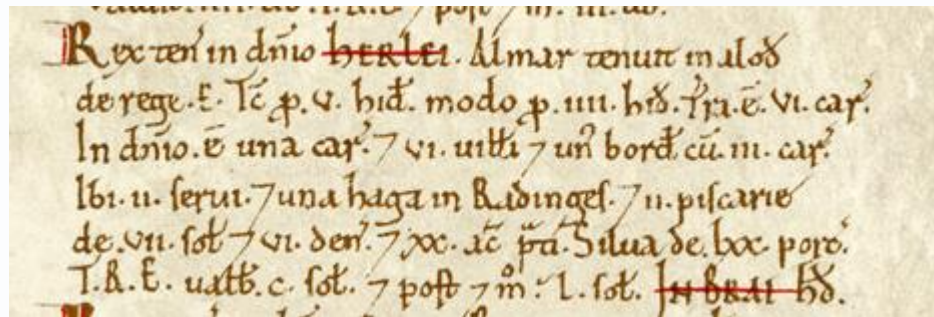 ■ [not really true, but the contemporary reputation]

Business data capture: analysis questions asked

► Business places
- What is this manor was called?
- How many hides there are?
- How many ploughs held by the lord and how many belonging to the peasants?

► Business owners
- Who held it at the time of King Edward?
- Who holds it now?

► Business people
- How many villeins?
- How many cottars?
- How many slaves?
- How many freemen?
- How many sokemen?

► Business properties
- How much woodland?
- How much meadow?
- How much pasture?
- How many mills?
- How many fisheries?

► Value
- How much had been added to or taken away from the estate?
- What it used to be worth altogether?
- What it is worth now?

Business Process

Business Place
Business Owner
Business Property
Business Person
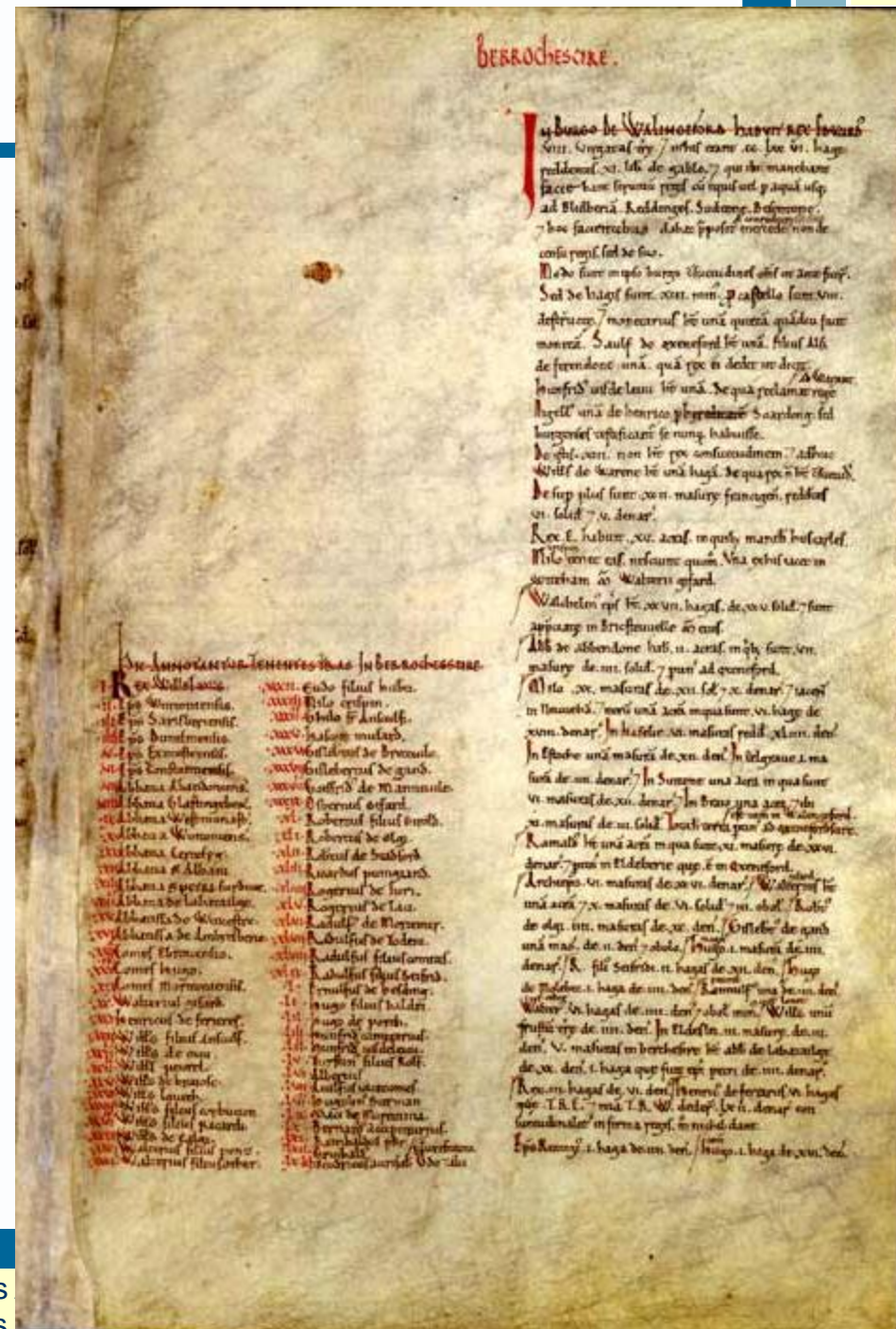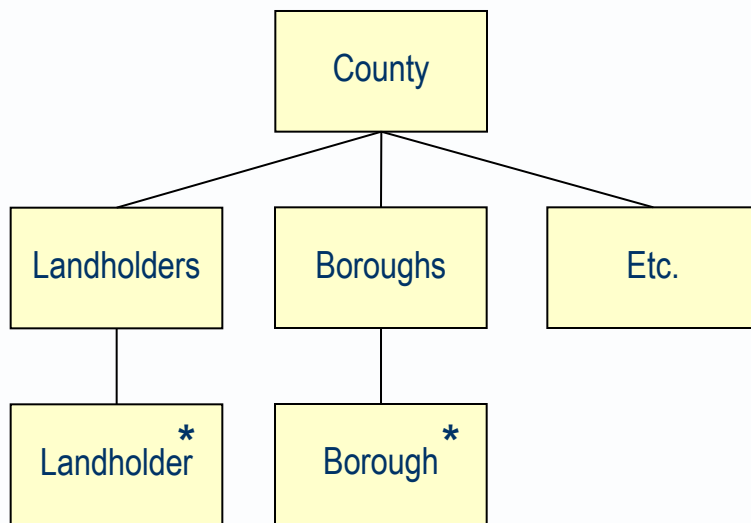**Business Data Entity**

Business Data Extract, Transform and Load process

- ► At amazing speed
- ► <u>without computers or message transmission networks</u>
- ► the surveyor's returns (input data flows)
- ► were summarized and re-shaped by scribes (into a data store)
- ► using a standard data structure for each County
- ► place names are scored through in red

First page for a county

▶ Berkshire begins with

▶ a numbered list of landholders followed by
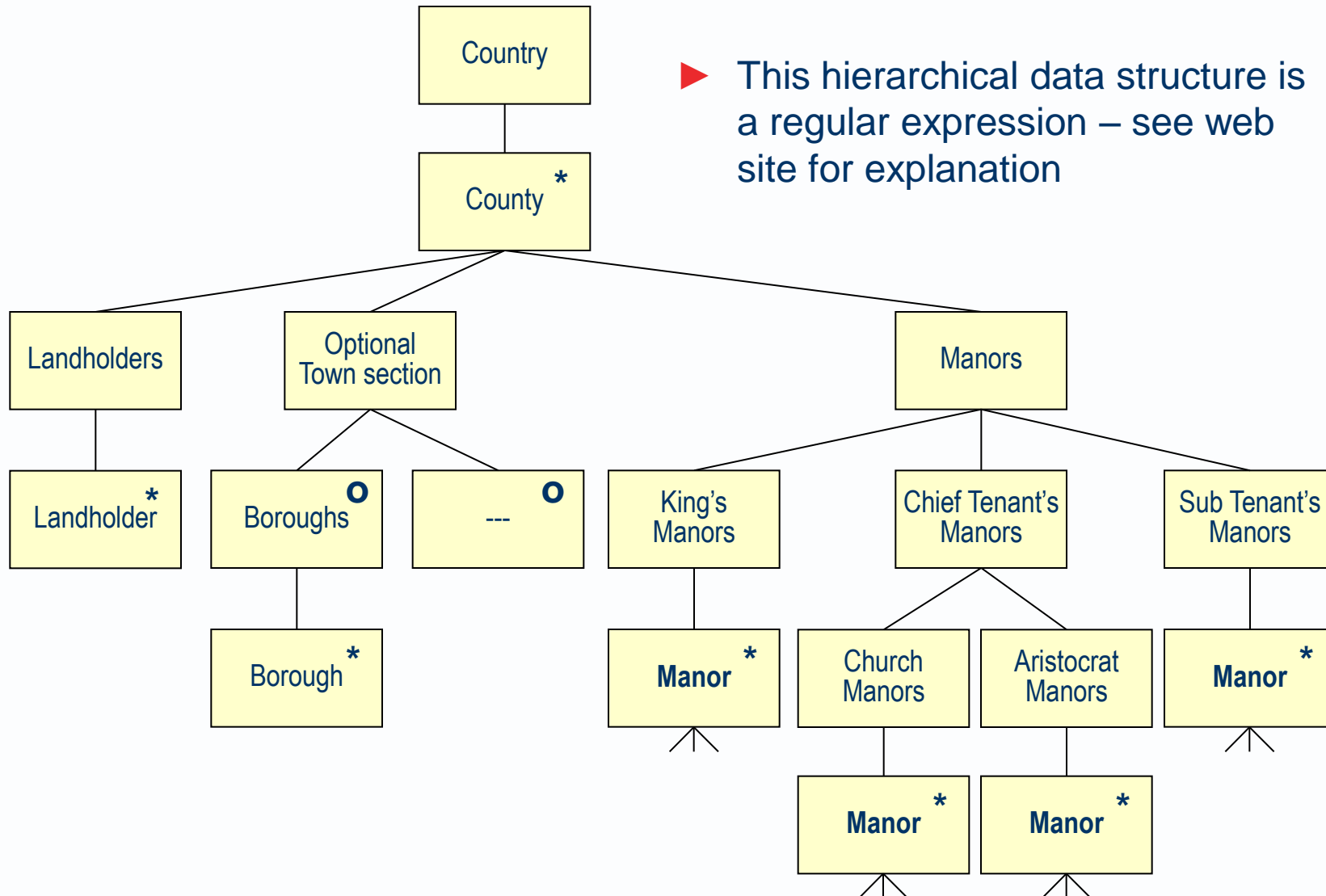
▶ a description of boroughs starting with Wallingford

County
├── Landholders
│   └── Landholder *
├── Boroughs
│   └── Borough *
└── Etc.

Manor entity data structure

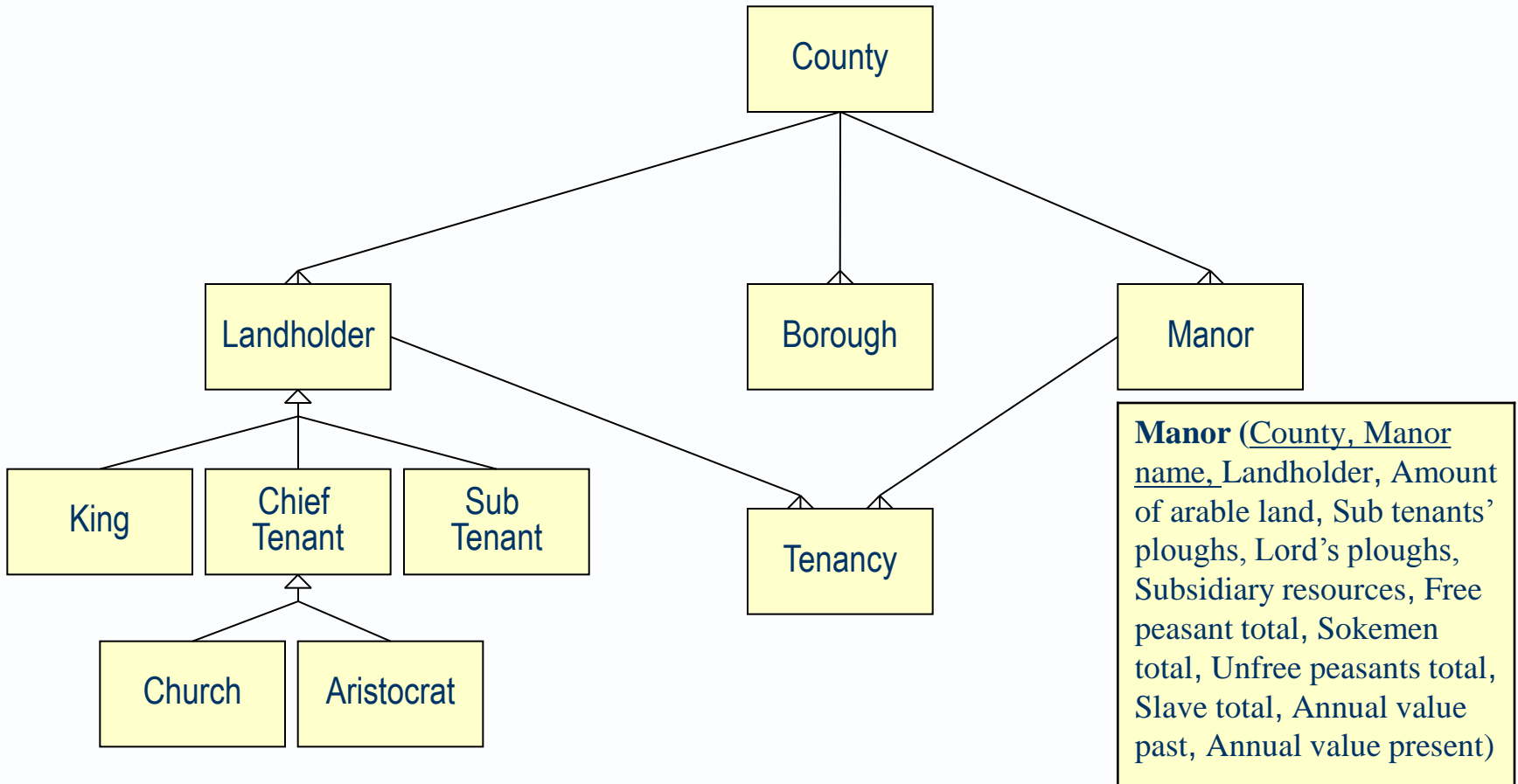| Manor entity	An expanded translation (Domesday words in bold)
County	**Berkshire**
Manor name	(in the demesne of) **Earley**
Landholder	**The King** (William) **holds** (in lordship – that is, by and for himself; he has not let it out to a sub-tenant). **Almar** (an Anglo-Saxon) **held it in alod** (freehold) **from King Edward**.
Amount of arable land	**Then** (in 1066, it was assessed for tax purposes) **at 5 hides,** **now** (in 1086 it is assessed) **for** (the equivalent of) **4 hides**.
Subtenants' ploughs	(There is) **Land for use by 6 ploughs**
Lord's ploughs	.**In demesne** (on the lord's land there is land for) **1 plough and**
Subsidiary resources (other sources of revenue)	**1 site** (or close) **in Reading** (presumably owned by or part of the manor) **and** (there are) **2 fisheries worth** (rendering) **7s and 6d** (per year) **and** **20 acres of meadow**. (There is) **Woodland for** (feeding) **70 pigs**.
Free peasant total	
Sokemen total	
Unfree peasants total	(there are) **6 villans** (villagers) **and 1 bordar** (smallholder) **with 3 ploughs**.
Slave total	**There** (are) **2 slaves** (owned by the King) **and**
Annual value past	**At the time of King Edward** (1066) **it was worth 100s, and**
Annual value present	**afterwards** (when William acquired the manor) **and now** (1086) **it is worth 50s**.

Compound primary key

Business data model (serial data flow version)

► This hierarchical data structure is a regular expression – see web site for explanation

Manor (<u>County, Manor name,</u> Landholder, Amount of arable land, Sub tenants' ploughs, Lord's ploughs, Subsidiary resources, Free peasant total, Sokemen total, Unfree peasants total, Slave total, Annual value past, Annual value present)

Business data model (data store version)

County

Landholder

Borough

Manor

King

Chief Tenant

Sub Tenant

Tenancy

Church

Aristocrat

Manor (County, Manor name, Landholder, Amount of arable land, Sub tenants' ploughs, Lord's ploughs, Subsidiary resources, Free peasant total, Sokemen total, Unfree peasants total, Slave total, Annual value past, Annual value present)

► Most of the content in this presentation is edited from
► http://www.nationalarchives.gov.uk/domesday/discover-domesday/great-domesday.htm

► In August 2006 the contents of Domesday went online, with an English translation of the book's Latin.
► Visitors can look up a place name and see the index entry made for the manor, town, city or village.
► They can also, for a fee, download the relevant page.

► See also http://www.bbc.co.uk/history/british/normans/doomsday_01.shtml

This document is published under…

► **Creative Commons Attribution-No Derivative Works Licence 2.0**

► Attribution: You may copy, distribute and display this copyrighted work only if you clearly credit "Avancier Limited: http://avancier.co.uk" before the start and include this footnote at the end.

► No Derivative Works: You may copy, distribute, display only complete and verbatim copies of this page, not derivative works based upon it. For more information about the licence, see http://creativecommons.org

Avancier