From Mud To Structure

Buschmann et al.: POSA 4
Pattern Language for Distributed Computing

Wiley, 2007
POSA
Decomposing the Layers
CCM – Corba Component Model – communication middleware
– language and platform independent variant of EJB
General Inter-ORB Protocol for demultiplexing (Reactor – Handlers)
IIOP (Internet Inter-ORB Protocol) is the implementation of GIOP for TCP/IP
Middleware Architecture (ORB) 2/2

- Clients
- ORB Core
- Operating System and Network Protocols
- Stubs
- Skeletons
- Request Demuxer
- Container and Object Adapter
- Components run in server processes
Defines structure and workflows
From Mud To Structure 2/3
(Layers)

Layer decomposition

Domain Object

Explicit Interface

Encapsulated Implementation

Bridge

Object Adapter

Observer

Command

Message
From Mud To Structure 3/3
(Domain Objects)
Layers (Interface, Implementation)
Model-View-Controller

User Interface

View

Controller

Model

Application Functionality

User

1. invoke

2. modify

3. start change notification

4. notify

5. update state

display

update

do something

get data

function_1

function_2

function_3

data_1

data_2

data_3
Microkernel

Compose different versions by extending a common but minimal core via plug-and-play infrastructure.
Reflection

java.lang.reflect, System.Reflection (C#)
Stable design: “Stability is the key to flexibility” (Buschmann)

Abstract Factory, Builder, Object Manager, Component Configurator