

Business Oriented Development with XPE/Gecko

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"Things should be made as simple as possible, but no simpler."

-- Albert Einstein

Expected Outcomes

- Understand basic SOA concepts
- Understand what is XPE and its difference from traditional technologies
- Understand what is XPE Gecko and its relationship with XPE
- Understand XPE Gecko concepts
- Understand the general approach of using XPE Gecko to develop a Web application

Service Oriented Architecture

- The world should be modeled as services NOT objects
- A service is a unit of action performed on behalf of its consumer that results in tangible value to the consumer
- For a service to be viable, the cost of a service must be lower than the value it provides to the consumer

What is XPE?

- XPE is an advanced application development platform and runtime environment built from the ground up to follow the principles of Service Oriented Architecture (SOA).

The XPE approach to SOA

- Each service is modeled as a value-chain
- Each service is implemented as a pipe composed of filters (value-adder)
- Using HTTP and XML for lowest possible service consuming cost and maximum number of potential consumers
- Leveraging XML for extensibility
- All nasty technical things are taken care by XPE (concurrency, caching, transaction, XML processing, database connection, deployment ...)

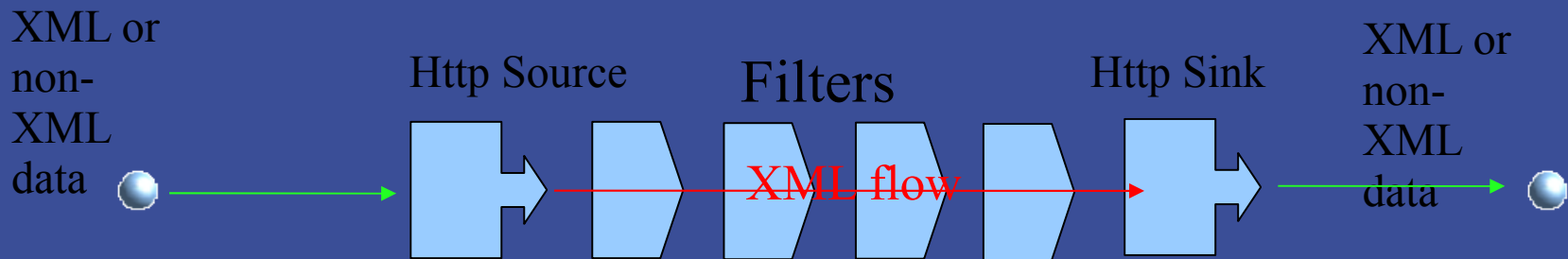


XPE principles

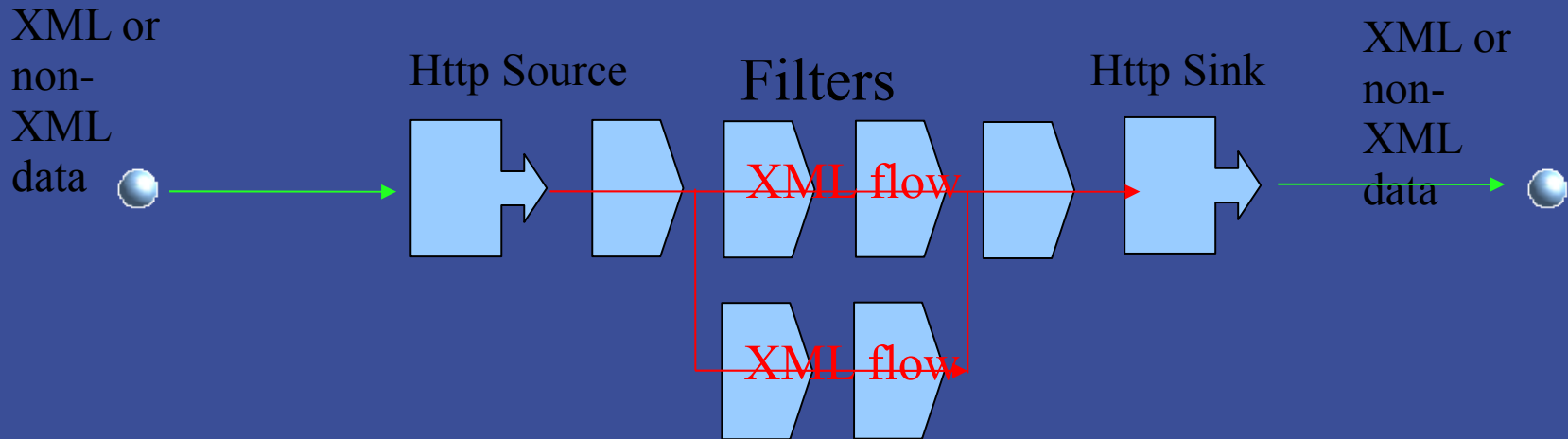
- Solve a specific business problem
- Evolutionary improvements
- As simple as possible
- Directly model the business process
- Reuse rather than reinvent
- Modularity / embeddability
- Decentralized development, content, services

Service design

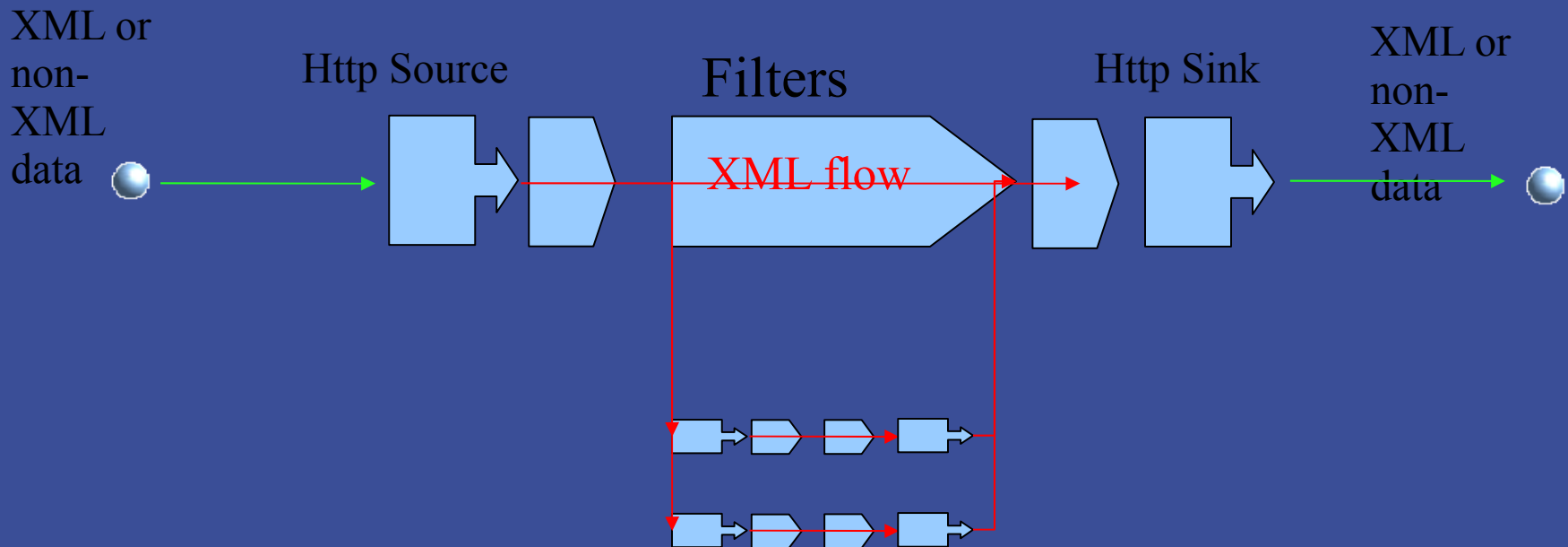
- Why people want to use my service?
- Divide a service into stages
- The pipe model:



Service pattern



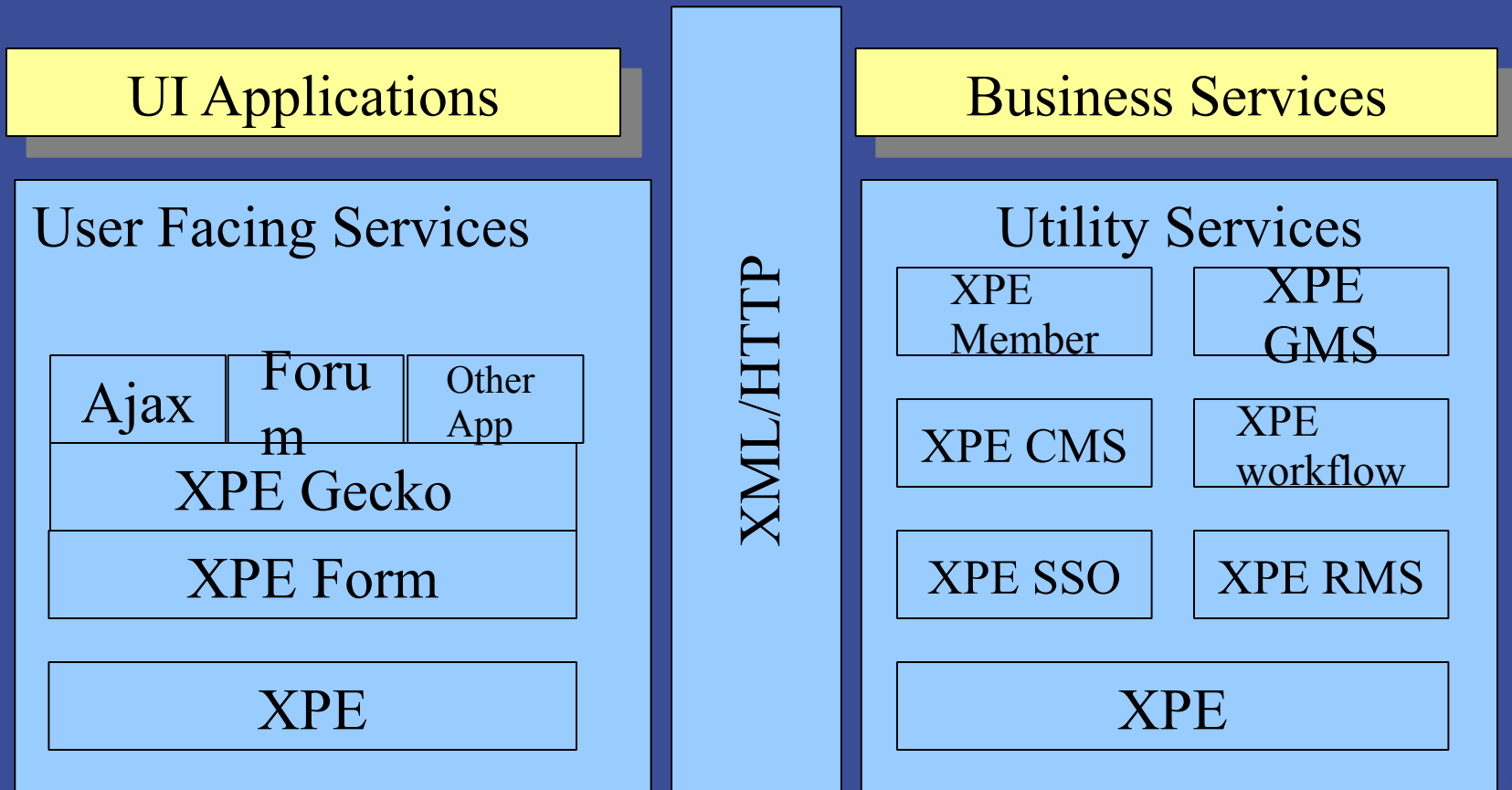
Service pattern



XPE Application

- An XPE application is a collection of XPipes that are capable of delivering a set of services when deployed in the XPE runtime environment.
- A number of XPE applications have been developed and can be downloaded from <http://softtouchit.com>.

XPE technology architecture



XPE Gecko

- XPE Gecko is a portal engine developed with the XPE technologies.
- It allows highly reusable UI components called Xlets to be developed.
- It is a development environment for rapidly developing Web applications with very little programming efforts.

The Anatomy of a Web Application

- A Web application consists of a number of Web pages. Each page represents an important state of the application.
- Each page contains a number of smaller functional blocks that collectively empowers an end user to accomplish their tasks.
- The user interaction is governed by a number of business rules;
- Information needs to be delivered to and collected from the user according to business rules.

The anatomy of a Web page

- A Web page is an aggregation of many smaller functional blocks;
- Each functional block is responsible for providing information or user interactions or both;
- Even two pages are functionally identical, they can have totally different appearance.

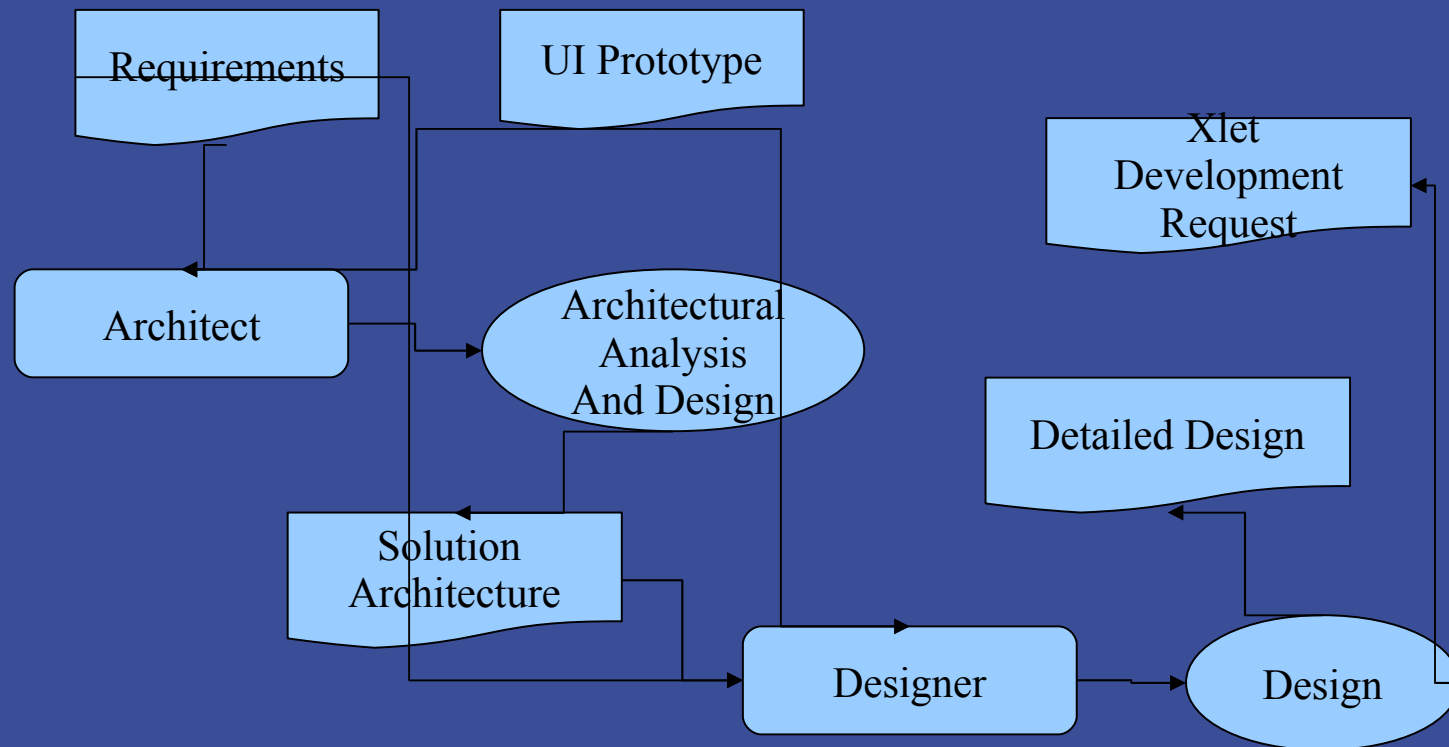
Web Apps vs Desktop Apps

- Web applications are universally accessible
- Maintenance costs are much lower than those of desktop applications
- Desktop applications tend to be faster and exhibit rich user interactions
- Desktop applications are platform dependent
- With the advancement of Ajax and alike technologies, the richness advantages of desktop applications is diminishing

Implementing a Web App using XPE Gecko

- The logical structure of a Web app is defined by a sitemap;
- A sitemap consists of a number of pages;
- Each page is associated with a template;
- A template contains a number of Xlets; An Xlet provides the required functionality by invoking the corresponding backend services.
- A template is associated with a number of CSS files;

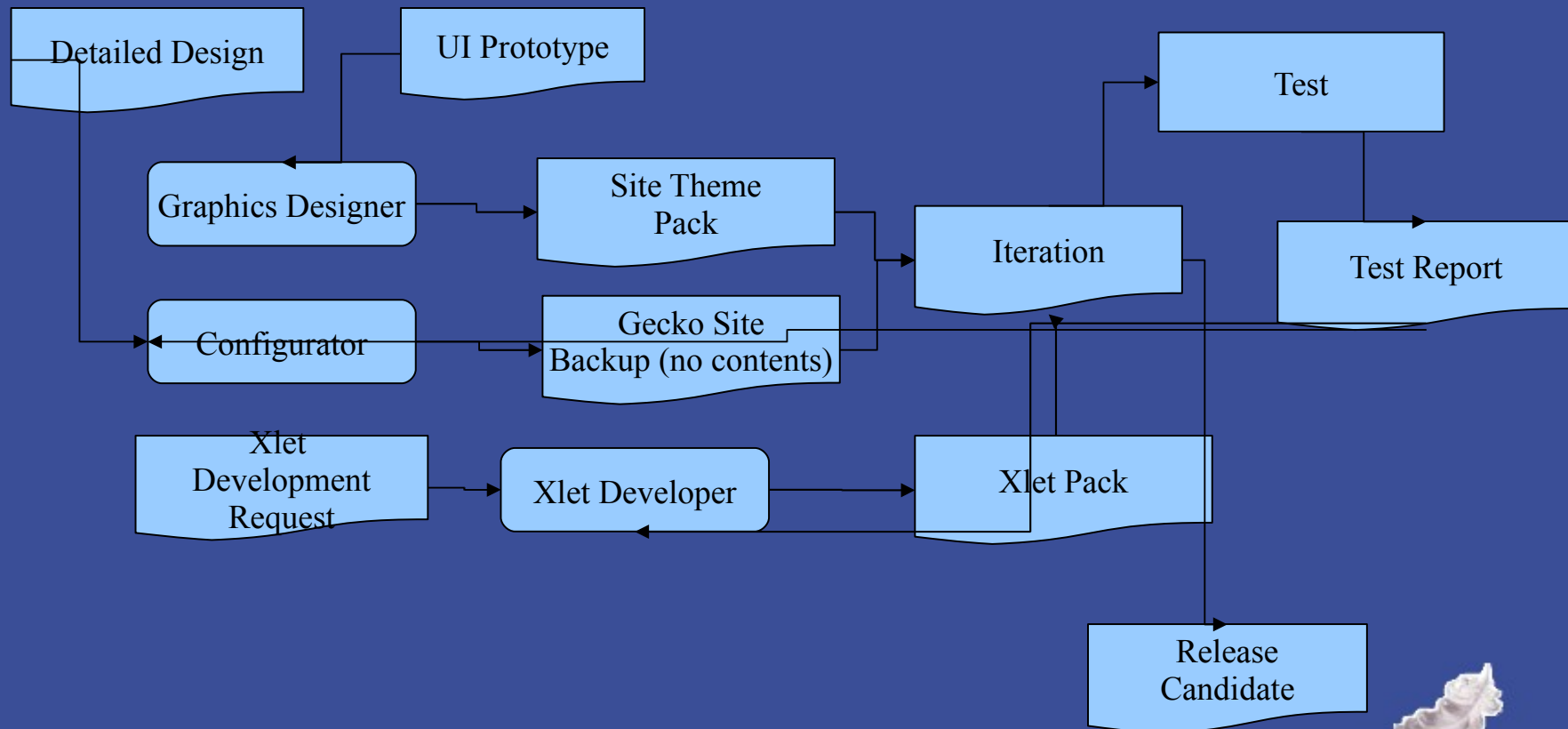
The Development Process (Design Stage)



Deliverables for Design Stage

- Detailed Design Document
 - Metadata Standard
 - How each functional requirement is associated with an Xlet
 - If no Xlet can fulfill the requirement, an Xlet development request is raised.
- Solution Architecture
 - Optional. Only required if multiple systems are involved.

The Development Process (Implementation Stage)



Deliverables

- Site Theme Pack
 - CSS files
 - Image files
 - Other static files (Javascrpts, flash files etc)
- Site backups
 - Sitmap
 - Templates
 - Content types
 - Roles
- New portal applications (Xlet pack)

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Questions?

Home Work

- What is the difference between SOA and OO?
- How is XPE different from traditional application server?
- Compare the XPE Gecko approach with traditional approaches.
- What is the difference between a Web site and a Web application?
- Explain XPE Gecko concepts: sitemap, page, template, xlet, content type, attribute group.

XPE – life like computing