# 2 FIB - Aplicacions i Serveis Web

[transpes] Unit 1: Introduction

Web Applications (Web Apps)

- *"A **software system** based on technologies and standards of the World Wide Web Consortium (W3C) that provides Web specific resources such as content and services through a **user interface**, the Web browser"* (Kappel et al.)
- Therefore, this definition excludes:
  - Web sites without software components (e.g. static HTML pages)
  - Web services
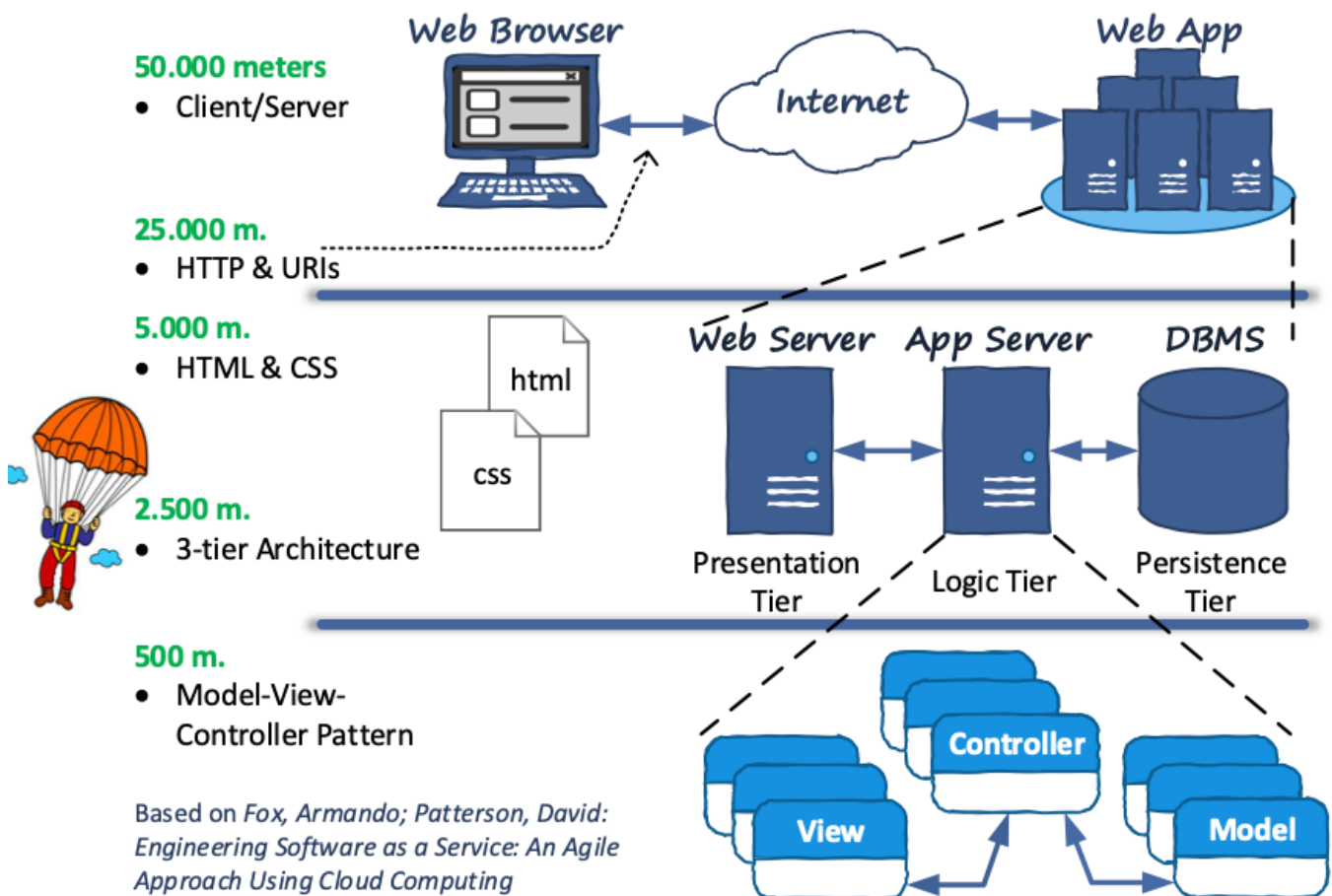
Categories of Web Apps
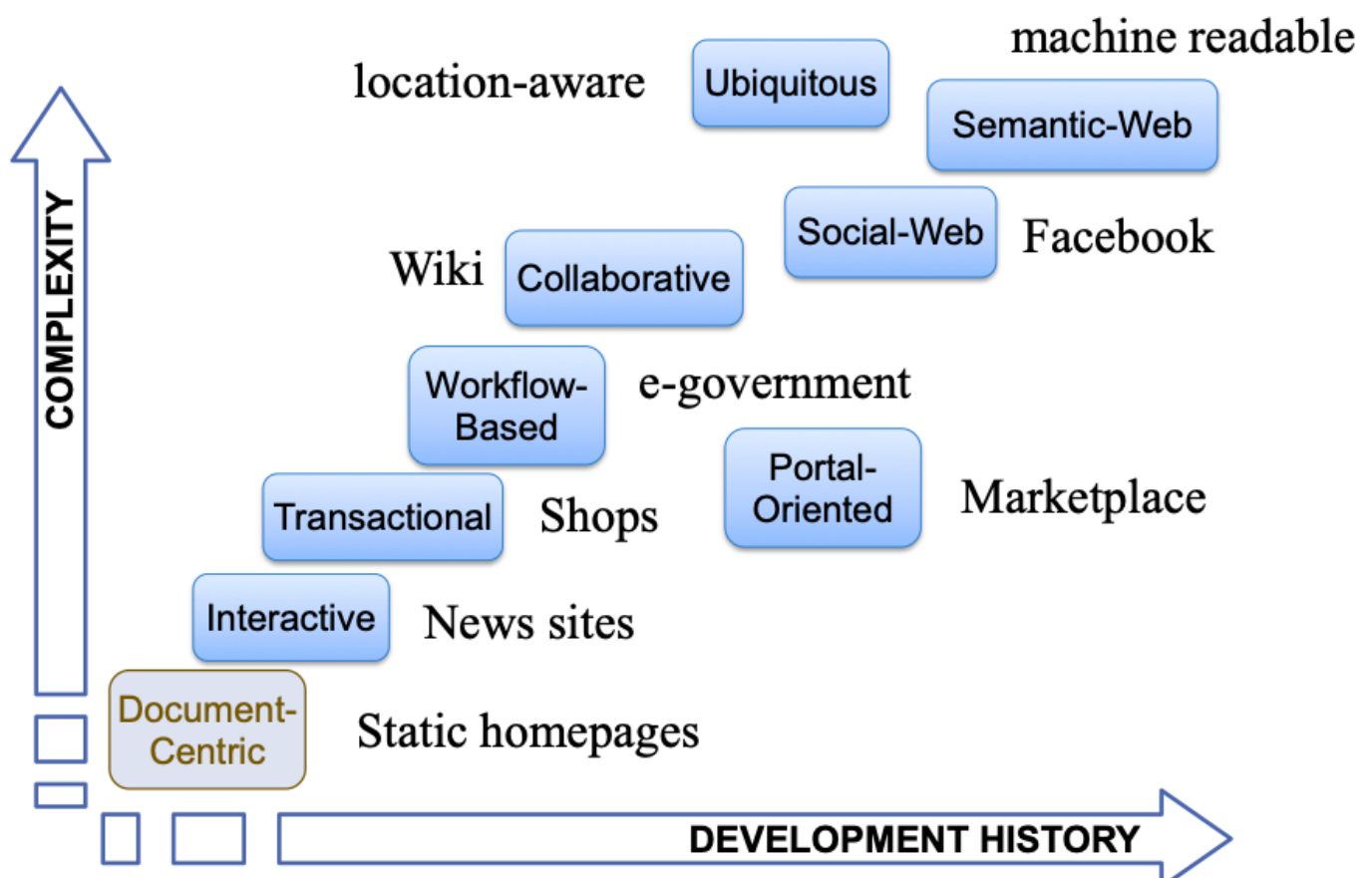
Characteristics of Web Apps

- Network intensiveness
- Global reach and Unpredictability
  - Who are the users?
    - Usage patterns
    - Backgrounds: language, culture, age, education, …

- How many users?
    - Potential / Occasional / Frequent users
    - Concurrency: average, peaks
- Space / Time
  - Internationalization
  - Location-aware services
  - Availability
- Hypertext
  - No-linearity
  - Navigation
- Content-driven
  - Document-centric
  - Multimedia
- Look and feel
  - Usability / Aesthetics
  - Accessibility
- Continuous Evolution
- Security

Web App Architecture

Based on *Fox, Armando; Patterson, David: Engineering Software as a Service: An Agile Approach Using Cloud Computing*

# Technologies for Web Apps

- Web Standards
  - HTTP, HTML, XML, CSS, etc

- Programming Languages:
    - PHP, JavaScript, Perl, Java, Python, etc
- Web Frameworks:
    - General-purpose: Spring, RoR, Laravel, Django, etc.
    - Vertical markets:
        - CMS: Drupal, Wordpress, etc.
        - e-commerce: PrestaShop, Magento, ...
- Security:
    - Firewalls, Cryptography, Authentication

Web services

- A Web service is a programmatically available application logic exposed in a well-defined manner over standard Web protocols
- (Somewhat) Related concepts:
    - Distributed applications
    - Remote Procedure Calls (RPC)
    - Middleware
    - Software as a Service (SaaS)
    - Service Oriented Architecture (SOA)
    - Web API
    - Cloud Computing
    - ...

Web Apps (WA) and Web services (WS)
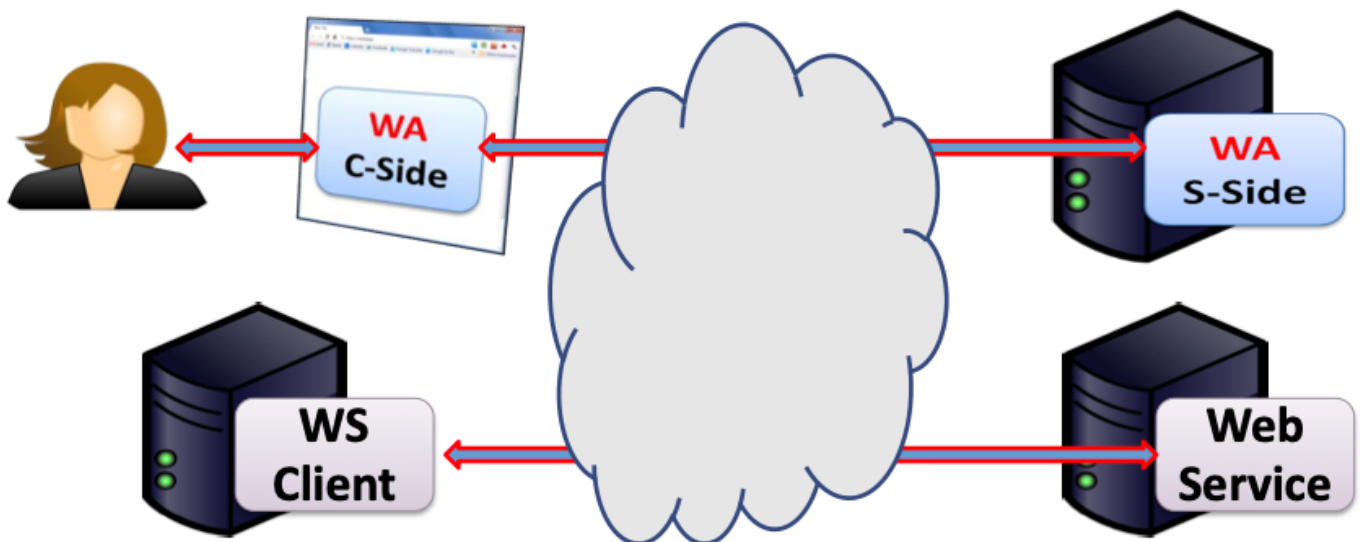
Two flavors of Web services

'Big' Web Services	RESTful Web Services
Sponsored by the W3C	Not a protocol but an "architectural style"
Protocols, protocols, protocols	Return to the founding principles that made the Web

'Big' Web Services	RESTful Web Services
Evolution of middleware concepts and techniques	Services in the Web
Services on top of the Web	Agility
Quality of Service	Web Mashup
Enterprise Application Integration	