High-level Componentization as a Way of Efficient Server-side Logic Implementation in Ubiq Mobile Platform

Alexandra Grazhevskaja
s.grazhevskaja@ubiqmobile.com

Saint-Petersburg National Research University
of Information Technologies, Mechanics and Optics

Valentin Onossovski
v.onossovski@ubiqmobile.com

Saint-Petersburg State University

Dmitriy Timokhin
dmitriy.timokhin@ubiqmobile.com

Saint-Petersburg State University

Mobilization of business applications
MBaaS emergence

- Problems in business applications' mobilization.

  > The importance of easy-to-develop backend and its mobile access.

- Emergence of MBaaS (StackMob, FeedHenry, AppEngine, etc.).
- Insufficient abstraction level of MBaaS systems' functionality.

Modern mobile application

- Simple application.
- Average complexity application.
- Distributed mobile application for business:

> Full variety of platforms, devices and screen resolutions support
> Versioned and customizable applications
> High reliability and fault tolerance

Application constructors-based approach

- Simple UI - “ready to wear” components.
- Simple business logic - “screen flow” transitions description.

Conclusion:

Development and deployment of simple applications.

Business applications - fast prototyping only.

Existing MBaaS tools-based approach

Client-side – standard developments tools.
Server-side backend - MBaaS systems.

- Third-party UI libraries.
- Low-level business problems – MBaaS systems.

Conclusion:

Simple and average complexity applications.

Business logic complexity is limited by MBaaS functions abstraction level.

Enterprise level solution and web services-based approach

Business logic backend - enterprise-level solution.
Connection protocol – web services.

- UI – Web technologies.
- Business logic – any abstraction level.
- Externals easy integration.

Conclusion:

Connection protocol is limited.
Resulting applications are too “heavy”.
No content generation and server-side event management.
Web UI is inefficient and poor.

Our proposal - “High level integration” approach

Business logic backend – server components:

- Big, universal, highly integrated, customizable.
- Any abstraction level.
- “Building blocks” encapsulating self-sufficient fragments of business logic.

Our proposal -“High level integration” approach

Opportunities of enterprise-level approach + usability of MBaaS.

- Complex business logic of any abstraction level.
- Server components implement business process items.
- Integration of any business verticals.
- No unnecessary traffic consumptions.
- Creating components “in one click”.

Basic requirements to the “host” environment

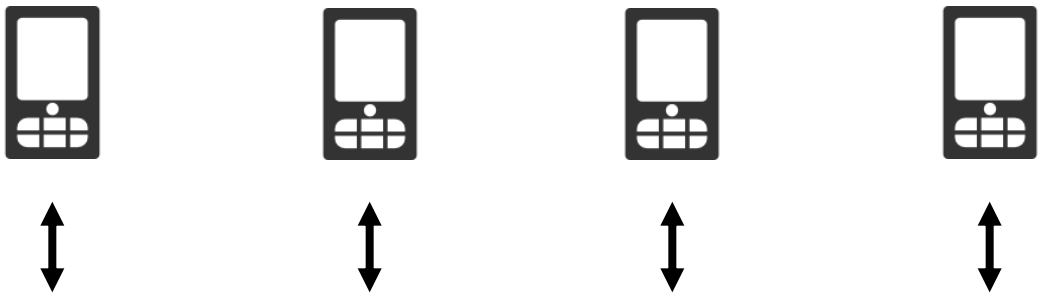
- Platform-level support of relatively big server-side independently running components.
- Mechanism of components’ interaction.
- As addition - IDE-level support of integrated components.

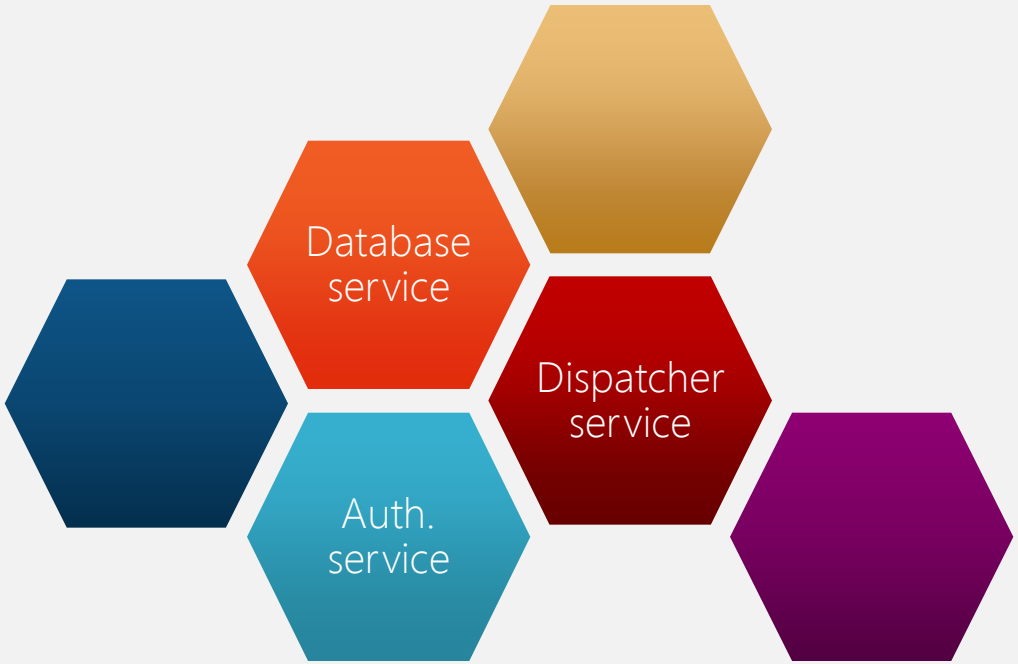
Implementation in Ubiq Mobile platform

Platform features:

- Ultra-thin client-based architecture.
- Safe disconnections – saving users' sessions.
- Cross-platform deploy.
- Applications: custom and services.
- Server core:
  - Communication with mobile devices
  - Applications' management and interactions
- Services over server core through API.
- Plug-in for Microsoft Visual Studio.

Implementation in Ubiq Mobile platform





Server core

Case study - Dispatcher Component

Componentization of users' interactions:

- Authentication;
- Interactions' management;
- Storing persistence data.

Logical model of users' interactions: users and dialogs.

Dispatcher-application interaction

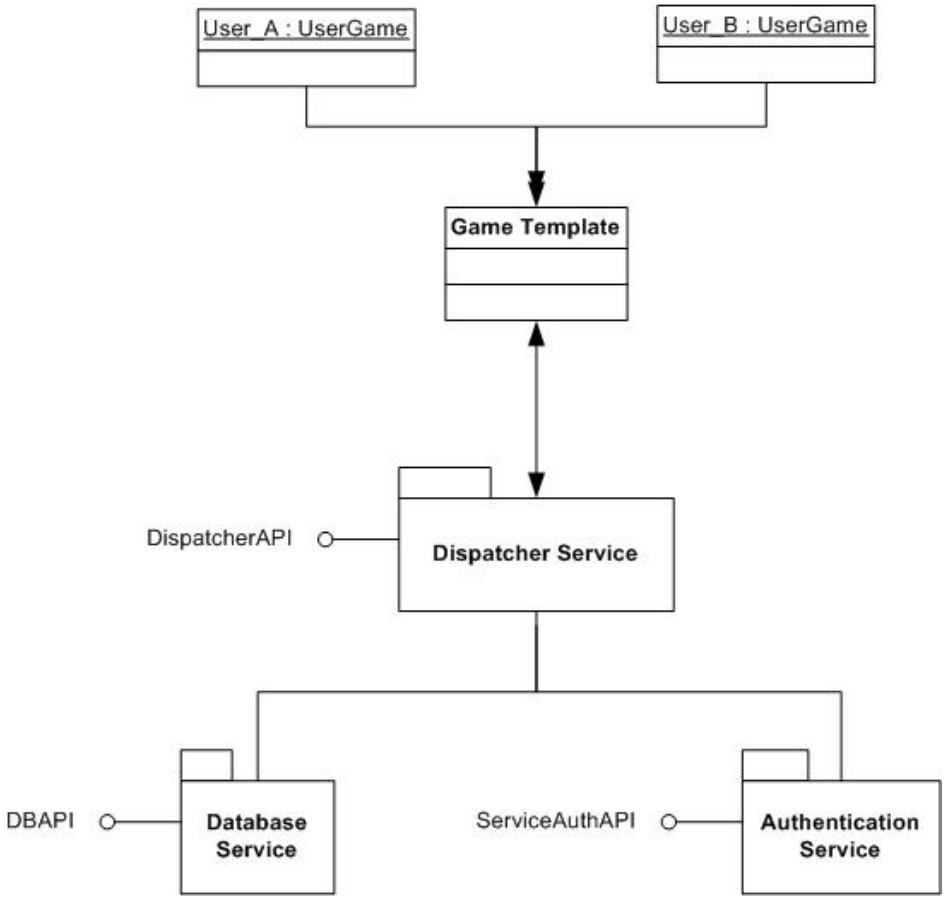
- One Dispatcher – one application type.
- DispatcherAPI object - locally instantiated in application.
- API methods wrap messaging to Dispatcher.
- Result – meaningful data or error code.

DispatcherAPI

DispatcherAPI functionality:

- User authentication and registration;
- Obtaining information about users;
- Dialogs processing;
- Inter-user communications.

Dispatcher usage



Conclusion

- High-level integrated “building block” for server side backend.
- Libraries of components – fragments of business processes.
- Effectiveness of particular implementation.
- Components’ extending directions.
- Not Ubiq-Mobile locked.

Thank You
for
Your attention!