

The m-volution Platform



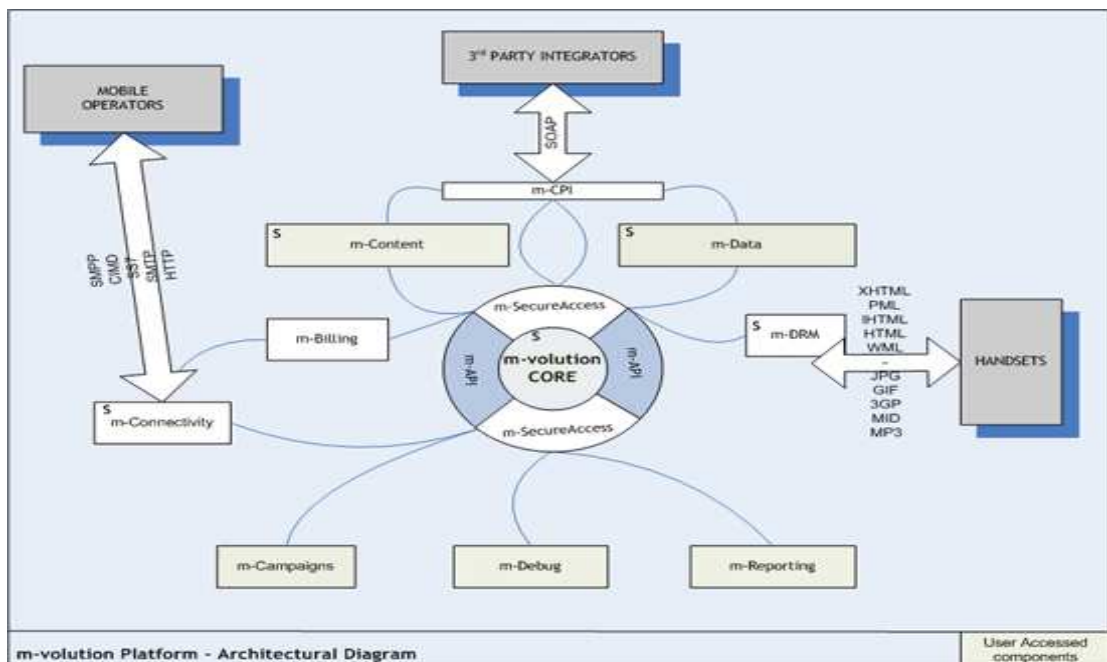
*" The internet is going mobile (for quite some time, with no viewable slowdown in growth). The analogy is 1 personal computer to 4 mobile handsets. We do not think of your handset as just a device for making calls, but as a mean of *communicating*, getting *entertained* and *doing your business* more effectively and quickly. Using it on all aspects of your life in making things easier for you, making it a *way of living*... "*

The Platform

Atcom Internet & Multimedia S.A. embracing the new mobile era, started to develop innovative mobile oriented services succeeding after a couple of years to release the first edition of the **m-volution Platform**.

M-volution is a cross-platform framework for developing mobile services and managing mobile content.

It is consisted of a number of separate but related components which interoperate in order to fulfill distinct needs and demands of the rapid innovations taking place nowadays in the area of wireless technologies.



Features

The m-volution platform is consisted of a number of components which interoperate using simple web standards, thus resulting to a unique total solution.

It is specifically designed to fulfil the demand for any recent and future need for creating and promoting services which are based on popular mobile standards of communication such as WAP, SMS and MMS.

Besides the basic units of functionality that the core of the system consists, several other elements are there in order to extend any client requirement.

These elements are categorized per function of the system and are responsible to cover needs arising from the usage of such services.

These might be: statistical reporting, productivity enhancements, increased quality of services, increasing performance productivity, easy and simple interconnectivity with external systems.

Benefits

Several benefits can occur from the usage of the m-volution Platform.

These are targeted to:

- [Developers](#)
- [Content Managers](#)
- [Mobile Marketers](#)
- [Editors](#)

Developer Benefits

World-class mobile service development is a painful and man-hour-eating task; especially when the targeted mobile audience uses a plethora of mobile handsets.

The m-volution platform provides a streamlined and unified environment that effectively lets the developer to focus on the service functionality rather than the handset/operator targeting. The platform transparently handles content output regardless the end-user's handset capabilities and mobile-operator platform.

Some platform APIs that are exposed :

- Mobile-network agnostic M-billing

- Instant [NetVolution™](#) content publishing to mobile handsets. Allows for the use of readily available content in [NetVolution™](#)-powered website installations by mobile handsets. Handles handset memory limitations , rendering capabilities and content transformation.
- Device recognition, and capabilities enumeration
- On-the-fly content protection, according to the [OMA](#) standards for DRM (Digital Rights Management)
- Network Capabilities recognition (2G/3G)
- User administration
- Telecom Operator network recognition and management (MSISDN, IMEI, i-Mode uid, network exclusion from specific services *) , where available

Content Manager Benefits

How does the m-volution platform cater for Content Managers ?

The m-Volution platform provides content managers with a full suite of tools that enable the processing and quick-to-market publishing of various types of content. Specifically it offers :

- Secure Publishing, distribution and management of multimedia content types such as Java applications , images, ringtones, videos etc
- Java™ MIDP1-2 standards compliant download and reporting mechanism
- Simplified / zero-config approach to handset compatibility
- Powerful statistics manager, multiple sites, multiple clients, revenue paths, multiple report export formats (excel, csv, pdf)
- Report query filtering via an intuitive web interface

Mobile Marketer Benefits

Mobile Marketing is the new mean of advertising.

A mobile marketer user of the m-volution campaign manager and other related components can benefit in the following:

- Easily create and design a mobile campaign
- Easily and efficiently complete a mobile campaign
- Generate flexible and customizable reports based on any mobile campaign he have created
- Generate and increase revenue (ROI)

Editor Benefits

The m-Volution platform provides mobile content editors with all the necessary tools needed to get information published instantly in a speedy, hassle-free and attractive to the end-user way.

Built upon the native handset-capability abstraction technology, it empowers editors to bring their published content to their mobile users. It supports embedding and linking of content (**images, flash-video***, **click-to-call links, chargeable content downloads****), text-formatting, article management and other attractive features that really lift all technical burdens from editors and lets them focus on the quality of content to be published.

* available depending on handset capabilities

** available depending on mobile operator network

Components

M-volution has a number of add-on components besides the core functionality ones. These are categorized based on the purpose of the current application and can cover different demands and areas.

m-basic development (core components)

The basic core component of the system, responsible for the coordination of the system procedures and flows and the basic functionality of it. It is the "brain" and the "heart" of the system together.

The flexible design of the core based on extensibility, provides the capability to interoperate seamlessly to any standard communication protocol is used from mobile operators. Thus the platform is fully compatible with the variety of industrial standards used in recent 2G,3G and 3.5G generation networks (GSM,UMTS). Moreover the basic core functionality offers a plethora of means of direct or indirect access to the simple user or to legacy systems, making use of all standardized interfaces.(SMS commands, WEB 2.0 interfaces, WEB API etc.)

Main given functions are:

- tree of page snippets
- multiple pages/services under the same installation
- multiple output, transparent to the end user or moderator user
- full api for interoperating with other systems or handling internal core functionality of the system flows
- content locking based on access authentication mechanisms (ip restrictions, service page and user level restrictions)
- time based access and visibility of services and sub snippets
- file management
- library management
- icons library
- templates library

- previewing of content and services on a mobile page

m-content management

The content management component is responsible for the management and manipulation of the content before outputting it to the end users. It is consisted of:

- Icon library. Custom predefined icon library. Capability to import external packages into to the library or define which packet libraries are needed in each installation
- Sound files library
- Unlimited content types support.
- Storage independence and easy transfer between legacy storage areas
- Content unique codes for sales
- Unlimited categorization of content and levels of categorization
- Grouping of content
- Dynamic Content Pricing. Categorization and prices based on groups and operators
- Legacy systems integration
- Massive export and import of content to compressed packets of xml and data
- DRM locking of content on the fly or pre DRM enabled content per device group
- Support the full midp 1.0 – 2.0 platform content lifecycle (download – report back)
- Support additional ways of downloading content (managed (cod, midp-like transactions), proxy-mode) or revert to unmanaged download (direct dl) for legacy handsets
- Provide full support for resuming-downloads (i.e. get byte range 0bytes – 12345bytes) / querying file size from mobile (i.e. HEAD request)
- Content uploading management
- Previewing of content to devices via sms, wap push, mms and other.
- Content is available on the library, external handlers decide on how to transfer the content (i.e. promote through wap-push, or direct send through MMS)
- Content can be expirable i.e. Christmas song will not be available after 31st of December
- Service to a 3rd party aggregator can be managed with access/ volume usage rights

m-data management

The data management component is responsible for the dynamic creation and insertion of new data to the mv database. The following capabilities are supported:

- Data entry
- Data searching (fast search optimization techniques)
- Data scheme creation
- Data forms creation and validation

m-access management

This component is responsible for defining specific roles and giving certain permissions to the www management application tool units.

It supports:

- Users creation and management
- Groups definition. Several groups of access are predefined. These are: Super User (full access to all services), Developer (access to code modules and custom integrations), Promoter (access to campaign related components), Supporter (access to logs and reports for providing live support to the end users) etc.
- User-Group access level permission to Units of the mv components
- Basic workflow functionality is also supported

m-Billing

The billing component provides the needed functionality to integrate and interoperate with external operators and their billing infrastructures.

Already developed mechanisms are ready to be used and accessed providing an easy overall integration to complicated legacy systems of the current mobile operator.

Basic supported features are:

- Billing methods are categorized in classes and types of charging
- Auto locking of a service is taking place based on not authorized access and on the type of the billing class which is assigned to the specific implemented service.
- User identification methods are based on operator authentication methods
- Easy to install a new billing method concept. All billing methods are packetized and categorized in classes and types of charging. A billing packet is consisted of all the schemes, classes and code needed to apply and use it at the mv engine
- Integration to billing gateways is also implemented and ready to applied based on the properties of each of the services (communications are taking place under the SSL protocol)
- Statistical data and graphical reports are generated for each billing scheme. All billing actions are logged and can be exported for later manipulation or for providing support to the end users.

m-DRM

On the fly or pre defined methods of DRM are supported. Content can be "drm'ed" on the fly based on the method of locking of the supported handset. Moreover content can be generated before and stored locally locked.

External libraries and methods of applying drm rights to the content are developed and used within the core engine.

The decision of what tactic to use is based on the parameters of the current application and the underlying handset to receive the content. I-mode drm per supported content type, OMA drm support for all 3 levels : Forward Lock , Combined Delivery, Super-distribution, proprietary DRM i.e. Vodafone Live drm

m-SMS/MMS connectivity

This component offers interconnectivity with third operators via industrial mobile

communication standards for covering needs such as:

- massive bulk sms sending
- on demand sms/mms sending and receiving of MT/MO sms

m-SMS Campaign manager

The campaign component is responsible for providing the means to promote different types of content and information to the end users. Moreover it provides all the statistical data needed to generate reports and make decisions on which type of content or information should be promoted and to which groups of users to target it (ROI).

A multi channel delivery option is implemented in order to cover different types of promotion and legacy users. These are sms, mms, wap push, email campaigns. Wysiwyg wizards are provided for easy creation of a campaign and for thoroughly testing it before final mass delivery.

Integration to 3rd party mmsc or smsc gateways can be parameterized and configured accordingly for easier testing. XML and SOAP is mainly used for the integration over secure connections (SSL). Http authentication and other methods of securely accessing external gateways are also supported.

The component features for the promoter user are:

- Create/ Manage lists and groups of users based on certain criteria
- Importing/Exporting of users (text based, direct db access and other means are provided)
- Create/manage campaigns (several types of campaigns are supported)
- Statistical data and custom report creation
- Scheduled sending

m-Debugging/Logging

The debug component provides the means to the developer for easier development of services. The main features are:

- code debugging
- content per criteria logging
- error handling
- alerting/ notifications. Scheduled criteria can be defined for sending automated notifications to groups as defined at the access management component.

m-Content Partner Integration (CPI)

Content partner integration to the mv engine is taking place via the core supported mv markup language. Mv ml provides the 3rd party integrator a scheme to implement each own services and serve them from within its premises and infrastructure. This scheme can be created by different legacy systems since it is based on xml.

The basic concept of its usage is that a mv ml data scheme is stored locally to the premises of the cp. When a service has been configured to support remote data

retrieval besides normal local data retrieval, a call to the remote implemented mv ml data scheme is taking place when a request to the page is committed. Automated reception of the remote data scheme is followed by an instant parsing of the data and then outputted to the mv engine core before final output to the end user's handset.

Caching and scheduled techniques have been applied to the remote integration to achieve overall better performance.

Moreover other methods of integration are supported such as: integration via rss feeds, custom xml schemes integration etc.