



Enabling IMS Transition Case Study

The Case

WARP4 provides real time convergent authorization, rating, discounting, promotion and charging. The interface with the Service Delivery Platform (SDP) is via Diameter protocol.

Background

IP Multimedia Subsystem (IMS) has been introduced by the 3rd Generation Partnership Project (3GPP) to provide an environment that speeds up the evolution toward Fixed Mobile Convergence (FMC) and enables fast creation of new services and applications. At present IMS is endorsed by standard makers such the European Telecommunications Standards Institute (ETSI), the USA-based Alliance for Telecommunications Industry Solutions (ATIS) and the UN-sponsored International Tele- communication Union (ITU). Telco big vendors are investing in IMS and first tier operators have committed investments for building up IMS solutions.

The Customer

A European wireless operator with more than three million subscribers (two million prepaid and one million postpaid).

The Need

In order to tackle a fierce competition faced by the ERIS4 customer- a Telco operator-, a system for efficiently managing Value Added Services (VAS), for rapidly enabling innovative service and content providers to partner with the operator and for managing new business models was required.

The Challenge

Three key challenging requirements:

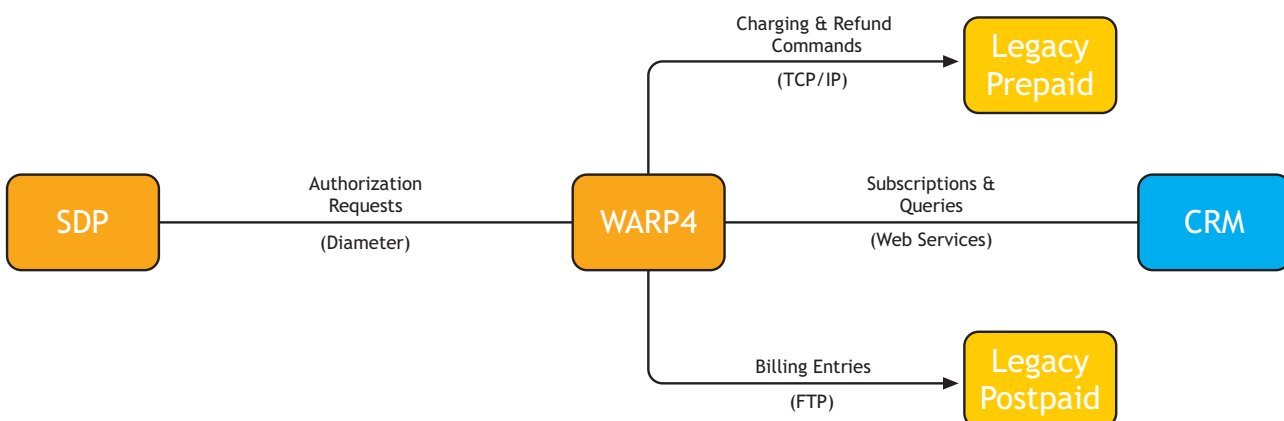
1. Providing real time convergence.
2. Avoiding expensive and risky changes to legacy prepaid and postpaid systems.
3. Enabling IMS transition.

The Selection Criteria

1. WARP4 ability to provide real time convergence for virtually any service and business model.
2. WARP4 ability to enhance legacy system features without affecting their operational behavior.
3. WARP4 truly standard Diameter real time interface and its ability to manage an incredible number of sessions. For each subscriber, WARP4 is able to manage any number of concurrent sessions and for each session it is able to manage reservations made within that session and all other subscriber's sessions.

The Architecture

The overall high level architecture was as follows:



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WARP4 is in charge of interfacing the Service Delivery Platform via Diameter in order to carry out real time convergent authorization, rating, discounting, promotion and charging. Billing entries generated by **WARP4** are sent to the legacy postpaid billing by using FTP. The charging process on the legacy prepaid system is carried out as described in the next section and it is based on a legacy proprietary TCP based protocol. CRM for the operator and partners is provided via Web Services within a Service Oriented Architecture (SOA).

The Process

1. SDP queries **WARP4** in order to know if a VAS can be delivered to a subscriber.
2. **WARP4** checks the subscriber status (e.g. active/inactive). VAS delivery may be authorized only for qualified subscribers as determined by the operator.
3. **WARP4** rates the service. Applicable promotions and special offers are also taken into account.
4. In case of a prepaid subscriber if the rate is not zero (i.e. there are no promotions or special offers for that subscriber on that service), **WARP4** charges the legacy prepaid billing.
5. If the prepaid subscriber has enough balance in the legacy prepaid billing, or if the subscriber is a postpaid one, **WARP4** authorizes the SDP request and stores the information about the service session transaction.
6. The SDP notifies **WARP4** with the service delivery status (e.g. successful/not successful).
7. For prepaid subscribers the process is:
 - a. Successful delivery. The stored service session transaction information is cleared.
 - b. Unsuccessful delivery. By using the previously stored service session transaction information **WARP4** is able to correctly refund the subscriber by accessing, if needed, the balance held by the legacy prepaid billing.
8. For postpaid subscribers the process is:
 - a. Successful delivery. The stored service session transaction information is used to create a CDR which is sent to the legacy postpaid billing for inclusion of the related billing entry in the subscriber's invoice.
 - b. Unsuccessful delivery. The stored service session transaction information is cleared. The entire reservation process is managed by **WARP4**.

The Hardware Investments

WARP4 server runs on a Solaris 10 server equipped with 4 CPUs and 16 GB RAM.

The Project Schedule

The system has been released by **ERIS4** in 3 months from the project kick off within the planned time schedule.

