

KTF successfully implements its next-generation Mediation system with HP OpenView



With an average of a million new subscribers every six months, KTF has emerged as one of the telecom leaders with its rapid growth. Established in January 1997, the company changed its name from KT Freetel in May 2001 after a merger with KT M.Com. In March 2003, KTF merged with KT ICOM. With the merger, KTF acquired KT ICOM's asynchronous IMT2000 frequency and business. KTF provides high-quality mobile Internet services with segmented brands targeted for various age groups and customer preferences. This includes wireless Internet 'Magic-N', 'Na' for N-generation, 'Bigi' for 13-18 generation, ladies-only brand 'DRAMA', 'Main' for 25-35 generation, 'Viz' for corporate clients, synchronous IMT-2000 service 'Fimm' that provides the world's first 1x EV-DO services, and the mobile commerce brand 'K-merce.' Other services offered by KTF includes CDMA voice service, fixed-mobile integrated Internet portal service Magic-N, mobile payment service K-merce, as well as WCDMA voice and packet communication services.



KTF project overview

- Project name: Mediation System upgrade
- Project period: October 20, 2003 – May 1, 2004
- Project scope:
 - Upgrade, replace and reorganise the old Mediation System with HP OpenView Internet Usage Manager (IUM)
 - Stage 1: WCDMA – Application of the HP OpenView IUM solution
 - Stage 2: CDMA – Application of the HP OpenView IUM solution
 - Consulting service
 - Derive the preconditions for future services and system applications through prototyping
 - Establish the direction of future development for the Mediation system
- Key management product: HP OpenView Internet Usage Manager 4.5

The implementation of HP OpenView Internet Usage Manager (IUM) began in mid-October 2003. The objective were to upgrade the Host Collector (H/C) of KTF's old Mediation system, and to resolve existing major problems in addition to building a new Mediation system that is scalable to meet additions of new services and systems.

In order to overcome the challenge of uninterrupted conversion from the current operating system to a new system during the final stage of the project, the project team established a validation plan consisting of a two-step integration and acceptance tests, and a phased conversion plan. After repeatedly going through the process of conversion, validation and monitoring, they successfully completed the system construction and conversion. HP provided consulting services to derive the dependencies for adding new services and systems to develop the new system. Through understanding KTF's business requirements, HP helped KTF planned the direction of its new Mediation system.

Stage 1 deployment: Upgrading the old Mediation system

Challenges

KTF needed a flexible and scalable Mediation system to process various types of billing data coming through the network. It wanted to secure competitive service levels by providing many next-generation services safely and rapidly.

KTF established the following plan:

- Develop a separate common collection module for various Network Elements (NE) protocols.
- Support various CDR formats including ASN.1, CIBER, Fixed Binary and PCX, and develop field-unit parsing capabilities.
- Develop a data allocation module that is not dependent on the downstream server interface protocol.
- Reinforce NE system module status and error monitoring as well as audit and control features.
- Construct a real-time error monitoring system that immediately notifies the administrator of the occurrence of any errors.
- Reinforce the monitoring of system resources such as disk space, CPU and memory.
- Provide simple statistics and reporting functions.
- Provide GUI-based configuration features for easy and rapid operation, and data collection.
- Design and implement independent processes based on a distributed architecture.

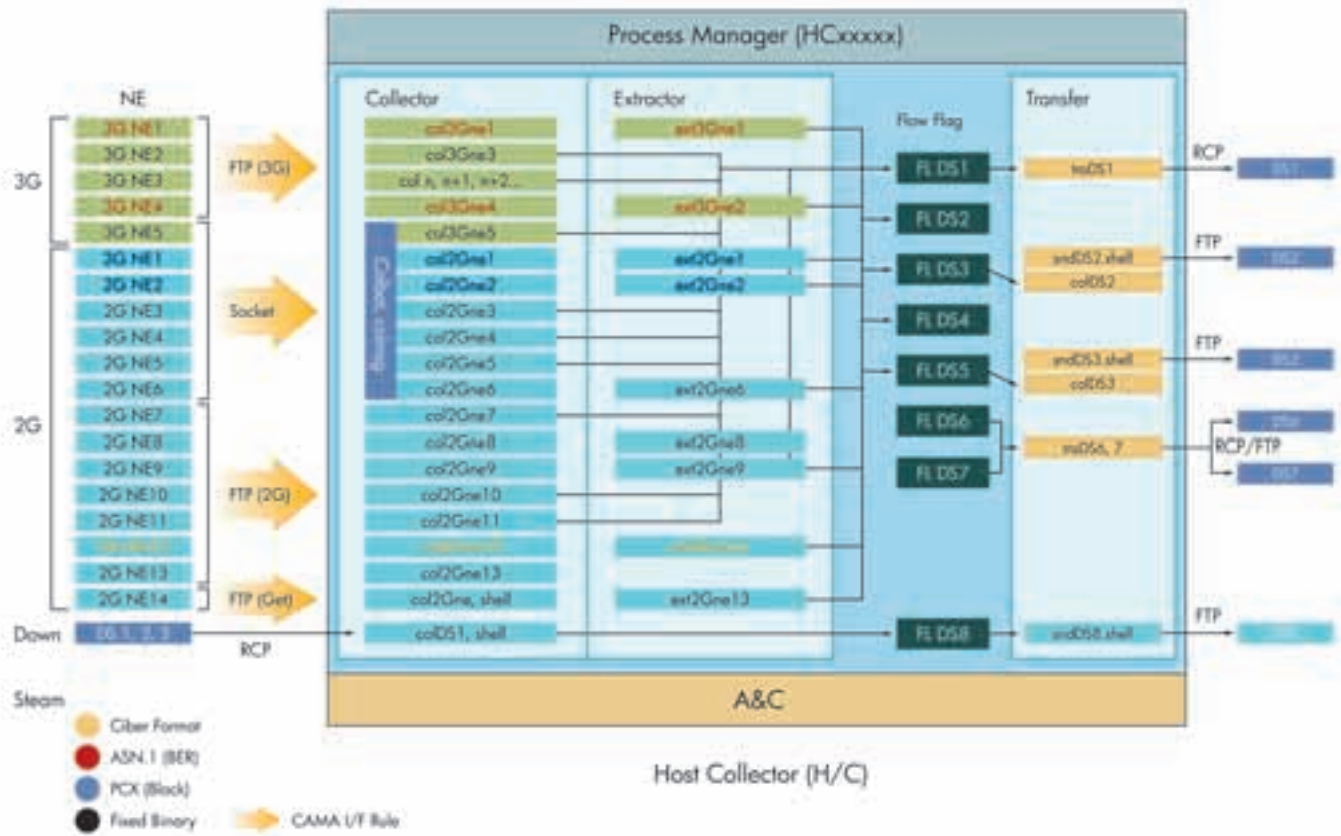
Solutions

By replacing the old Host Collector (H/C) with the HP OpenView Internet Usage Manager (IUM) Mediation Platform, KTF could solve the major problems of the old H/C. In particular, configuration, audit and control, and error management have been integrated with the help of Launchpad and Operations and Maintenance (O&M) of HP OpenView IUM.

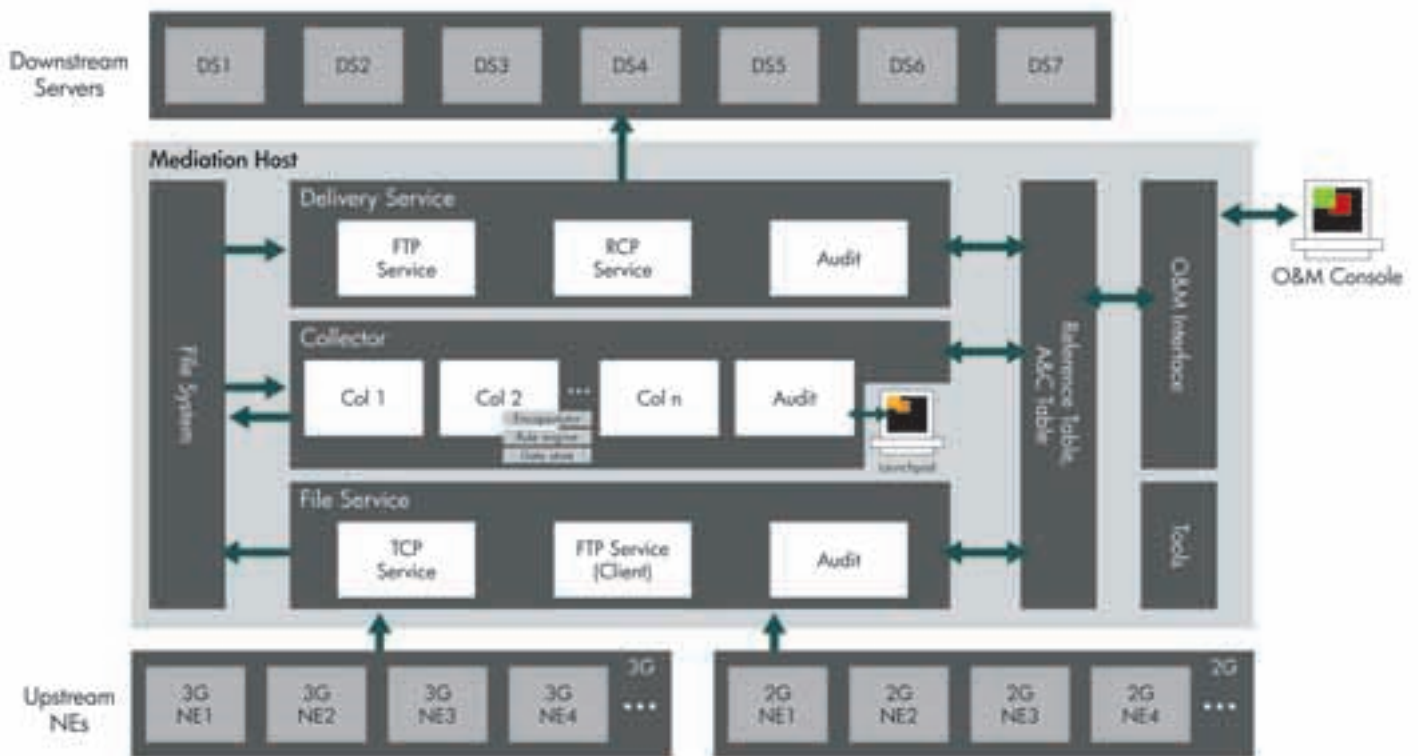
In the future, Message Acquisition and Formatting (MAF) rules can be applied after data collection and more improvements can be achieved with HP OpenView IUM. The main solutions are described below:

- File Service: By creating modules for NE interfaces, the duplication of billing data collection can be prevented and more efficient management is possible.
- Delivery Service: Central control and more efficient management of data transmission to the downstream server.
- Error Handling: Error handling for transmission of file omission, failure and retransmission, instant detection and action for system trouble, provision of error statistics and easy reporting.
- Audit and Control: Record-unit monitoring in addition to the file unit monitoring and GUI-based intuitive management system.
- Configuration: Since the collection of new types of data is now possible by a simple configuration instead of coding, the development time is greatly shortened and the management system for data processing tasks has been improved.
- Architecture: Can build a flexible environment for KTF's future Mediation system using the features of the solution such as scalability, independence from the hardware platform, correlation, and aggregation.

AS-IS architecture



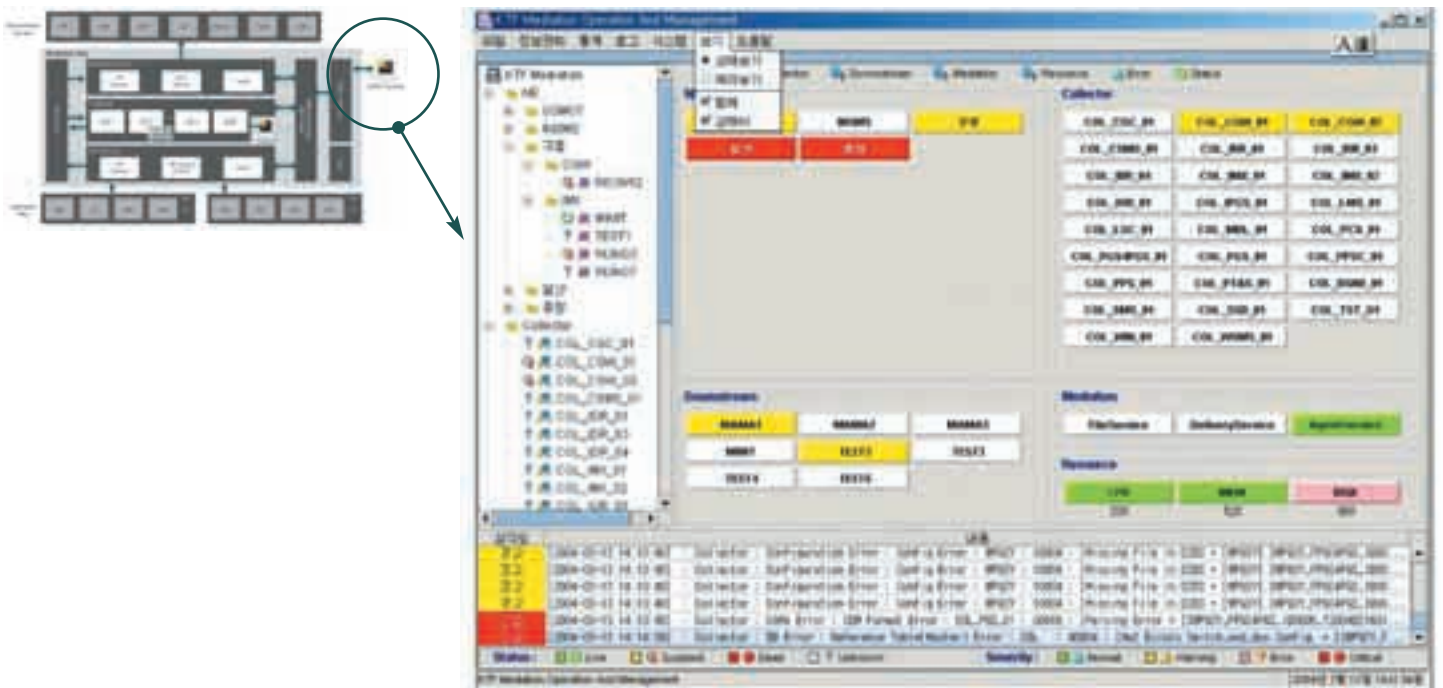
HP OpenView Internet Usage Manager-based Mediation system architecture



Key Implementations and Improvements

- File Service:
 - With the development of File Service for NE interface, data collection tasks can be performed independently from the NE protocol.
 - HP OpenView IUM Collector is set up independently from file transmission protocol and process.
- Collector:
 - Code change for parsing of existing and additional attributes is not necessary.
 - New parselets can be developed for the parsing of exceptional attributes.
 - Enhanced business logic can be applied in the record unit with the parsing of all attributes.
- Delivery Service:
 - Interface protocols for each downstream target can be created as modules which are reusable.
 - The Interface Modules can be registered in the Delivery Agent for central management.
 - Delivery Service enables operations to be independent from the downstream protocol.
 - Delivery Service operation and status management through the O&M Console.
- Console:
 - Monitor the status and errors of File Service/File Delivery/NE through the O&M GUI.
 - Provide search and report features for errors occurred during system initialisation or operation.
 - Provide tools for viewing, searching and modifying ASN.1 CDR.
 - Monitor the status of Collector/Downstream Application/NE.
 - Start or stop File Service, Delivery Service and Collector through the O&M Console.
 - Monitor system resources such as disk/CPU/memory and set threshold values for alarm generation.
 - Auditing the file and record units.
- HP OpenView IUM Key Module:
 - Set various business rules through the Launchpad GUI.
 - Provide collector templates for easy and rapid development of new collectors.
 - Easy testing and deployment of developed collectors.
 - Distributed architecture design that is independent from processes.
 - Collector status monitoring and automatic startup management.
 - Rapid and simple development of plug-in components using Software Development Kit (SDK).
 - Reinforced management of user groups and permissions through Launchpad and O&M.

Operations and Maintenance console



Stage 2 deployment: Consulting services

In order for KTF to maintain its leading position in a highly competitive market, it needs to establish strategies for continued innovation and enhancement of the Mediation system, and pursue all possible opportunities to provide future services including:

- Multimedia
- mCommerce
- Personalisation
- Context-driven
- Real-time
- Convergence
- Immediate toggling between voice and data

With this strategy in mind, the project team explored all possible options and derived the preconditions for Correlation, MAF Rule Migration, and Event-based Processing through the development of several prototypes.

Challenges

With the existing system, it is difficult to implement correlation capabilities and a single Mediation system that combines data collection and the necessary MAF. This results in duplicate processing and wastage of company resources. Only deferred payment is possible because the data collection part performs the validation in file unit, while the MAF part performs the record-unit validation and business rule application.

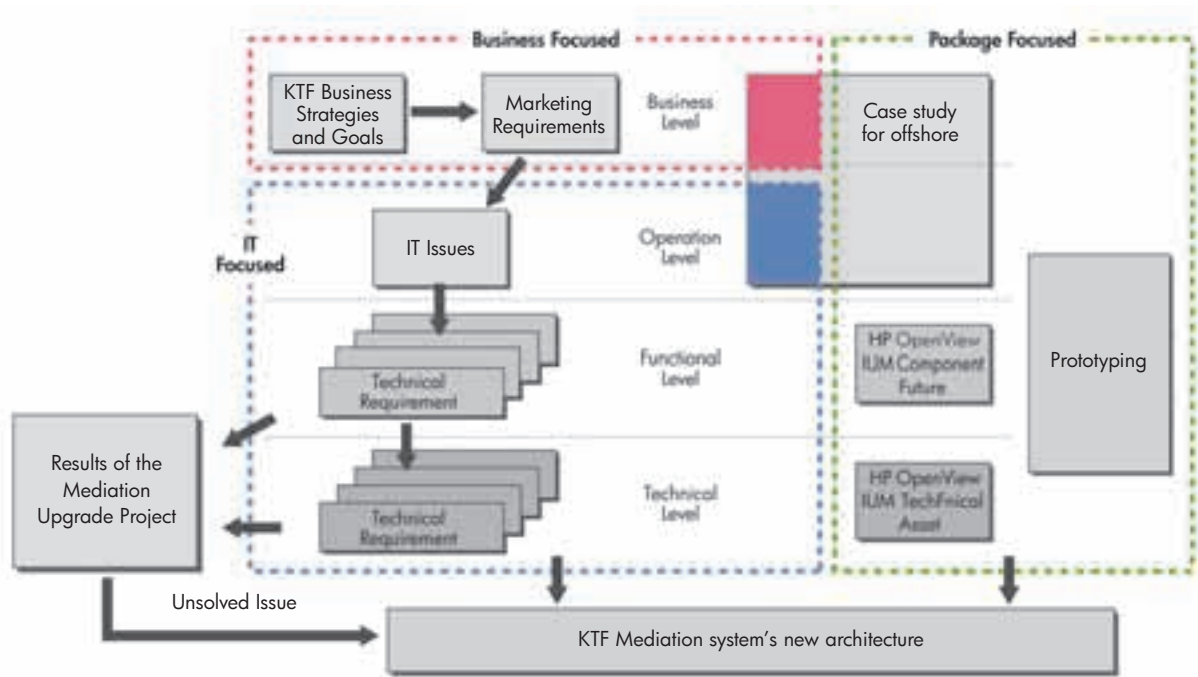
Solutions

Review the possibility of differentiated billing policies for use of content. This is done by linking the usage of the content and data network, as well as the possibility of a single business rule application in the record unit and an integrated mediation process with the HP OpenView IUM Single Platform.

The preconditions and methods of maximising the effects of IP-based services are derived with the construction of an improved mediation architecture for event processing.

Main implementation procedure and improvements

- Perform Correlation analysis for each scenario through service-related data analysis.
- Improve the Correlation success rate by applying the CDR filtering rules.
- Accommodate most MAF rules with the standard components of HP OpenView IUM and customised components.
- Confirm the possibility of applying additional business rules, even though the old MAF only played the role of a Rating Preprocessor.
- Configure and confirm the possibility of a HP OpenView IUM Collector that supports the stable GTP standard protocol necessary for event-based billing to provide various prepayment services.
- Parse CDR generated from the source using the GSN simulator and send it to Mediation as an event.



Expected results

HP OpenView Internet Usage Manager

- Upgrade, replace and reorganise the system with the HP OpenView Internet Usage Manager.
- Support time-to-market with improved flexibility of the Mediation infrastructure because of the activation of services and introduction of various NEs.
- Enhance the productivity of additional development and the efficiency of operation with the construction of a convenient development /operation environment.
- Secure high reliability and accuracy of data with improved error handling and management.
- Prepare the foundation for reinforced Revenue Assurance with enhanced Audit and Control features.
- Lay the groundwork for continuous improvement of the Mediation process with better organised system architecture.

Consulting service

- Confirm the possibility of releasing more competitive, differentiated products that combine the network and content.
- Confirm the possibility of validating data and applying test prices before providing services/products to customers.
- Confirm the effects of improved Mediation process because duplicated processing can now be eliminated by the application of a single MAF rule thanks to the application of HP OpenView IUM.
- Confirm cost savings by the prevention of the unnecessary use of physical disk space and enhanced efficiency with the application of business rules and the consolidation of Mediation processes through the HP OpenView IUM.



Contact information

For more information about HP OpenView software, please call your local HP reseller or HP sales office.

Australia/New Zealand
(61-3) 9275-3291
openview_events@hp.com

China
(86-10) 6564-5806
software_china@hp.com

Hong Kong
(800) 938-833
software_solutions@hp.com

India
(91-124) 290-6176
software.india@hp.com

Indonesia
(62-21) 572-1077
software.indonesia@hp.com

Korea
(82-2) 2199-0913
software_korea@hp.com

Malaysia
(603) 2698-6555
software_malaysia@hp.com

Philippines
(63-2) 888-5900

Singapore
(65) 6275-3888
software_singapore@hp.com

Taiwan
(886-2) 8722-8777
software_taiwan@hp.com

Thailand
(662) 353-9000

For more information on HP OpenView, visit:
www.hp.com/managementsoftware

© 2005 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

5983-0573EEP, 01/2005

