Portal Implementation
For a
Broadband and Infrastructure Provider

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INDIA

Client

The client was a leading infrastructure provider for Internet Services and offer services in over 100 locations in Japan. The client provides broadband access (DSL), dialup access (ISDN, PSTN), shared hosting, dedicated hosting services and domain registration services.

Challenge

The client was selling the service under three different brands. They were also using resellers and agents to market their services. The resellers would market under their own brand at their own defined prices with commissions.

The client had also acquired two Infrastructure companies that were using a home grown billing system. The client wanted to maintain the branding of each company in every customer interface and still have one billing system do billing for all the services. The client also wanted to implement cross-selling of services of one Infrastructure provider division to customers under a different brand.

Solution

4-layer service architecture was implemented to meet the client needs.

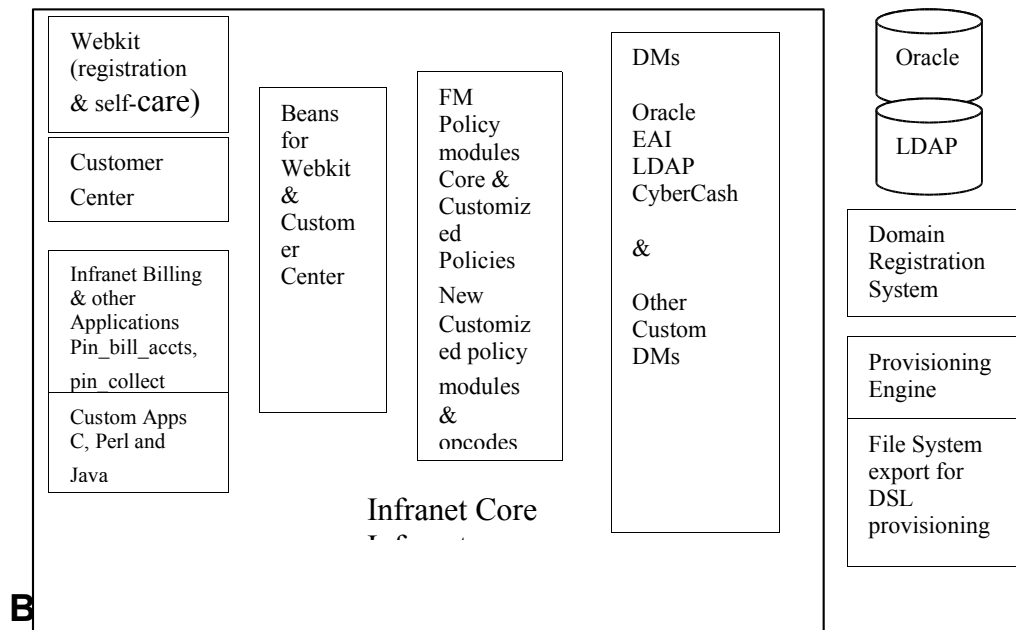| User Interface Layer	
Internal Staff Administration	Customer Interface (Registration, Self-care)
Business Policy, Billing, Database Layer	
Pricing policy	Billing/Finance
Provisioning Layer	
Provisioning Engine	LDAP
Services Layer	
Dialup, ISDN, ADSL	Mail hosting, web hosting, Domain Registration, Mailing list, Application hosting

1. User Interface Layer: Infranet's Branding capabilities were used to provide the customers with different look and feel for each brand.
2. Business Policy, Billing Database Layer: Infranet's policies allow users to enforce various business, service and pricing rules. Marketing could create packages from the a-la-carte menu items of various services for each brand with desired pricing.
3. Provisioning Layer: Service provisioning could take place through either through LDAP for services which can read provisioning information from a directory like email, web and dialup. For hosting and domain registration services a provisioning engine was developed to send appropriate messages to set up a workflow based solution.
4. Services Layer: New services could be developed by the technical team and added on the services layer which would be added to the a-la-carte menu of

services available to marketing for creating different pricing packages for different brands.

The above architecture was configured on a distributed system implemented on Sun platform with L4 switches and Oracle High Availability architecture for developing a production ready system.

Functional Architecture

The following functional architecture in Infranet was used to implement the customer's requirement.

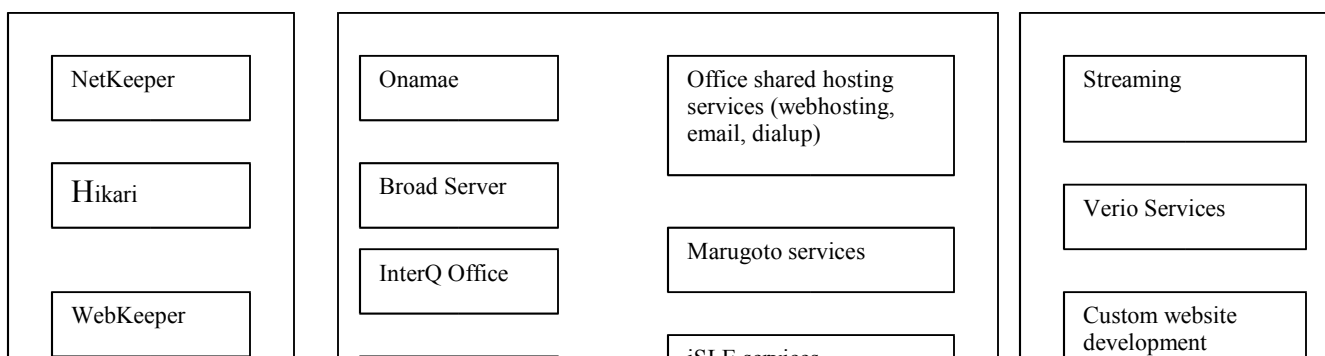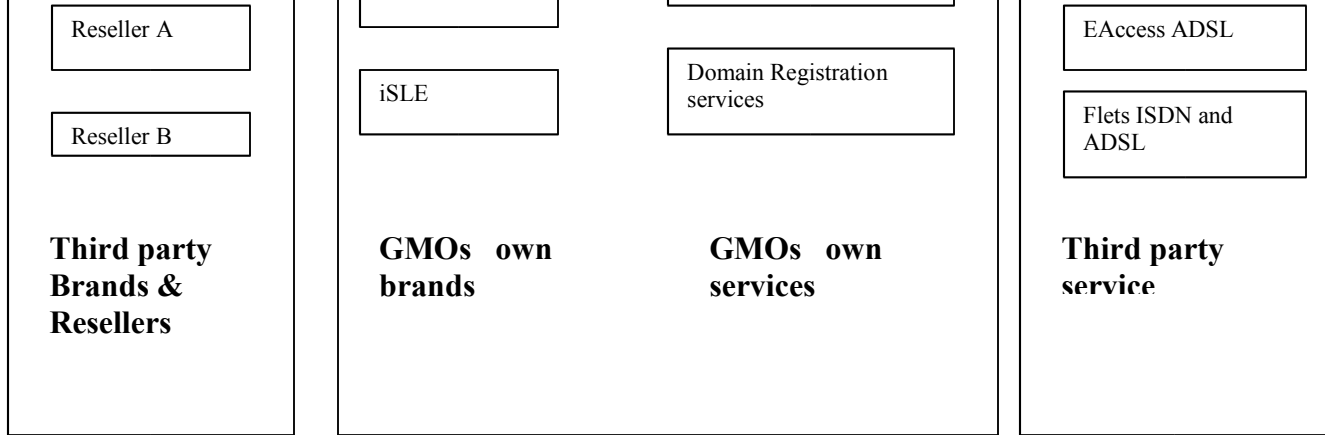|				
Webkit (registration & self-care)		DMs		Oracle
Customer Center	Beans for Webkit & Customer Center	FM Policy modules Core & Customized Policies New Customized policy modules & opcodes	Oracle EAI LDAP CyberCash & Other Custom DMs	LDAP
Infranet Billing & other Applications Pin_bill_accts, pin_collect				Domain Registration System
Custom Apps C, Perl and Java				Provisioning Engine
				File System export for DSL provisioning

Infranet Core

B

GMO sold its own service and under different brands. Apart from that there were third party brands, who would sell GMO services under their name. They set their own packages, own prices, provide customer support and bill their customers. GMO provides customer and service management tools to these companies, so these companies can manage services for their customers.

In some cases GMO takes the responsibility of billing the end customers on behalf of these brands.

GMO uses third party services such as streaming, verio, eAccess, Flets ADSL/ISDN and makes them available to any of its brands for packaging.

These services are physically provided by third party companies but GMO takes the responsibility of provisioning them if a user signs up for a package including them.

NetKeeper	Onamae	Office shared hosting services (webhosting, email, dialup)	Streaming
Hikari	Broad Server		Verio Services
WebKeeper	InterQ Office	Marugoto services	Custom website development

Reseller A			EAccess ADSL
	iSLE		Flets ISDN and ADSL
Reseller B		Domain Registration services	

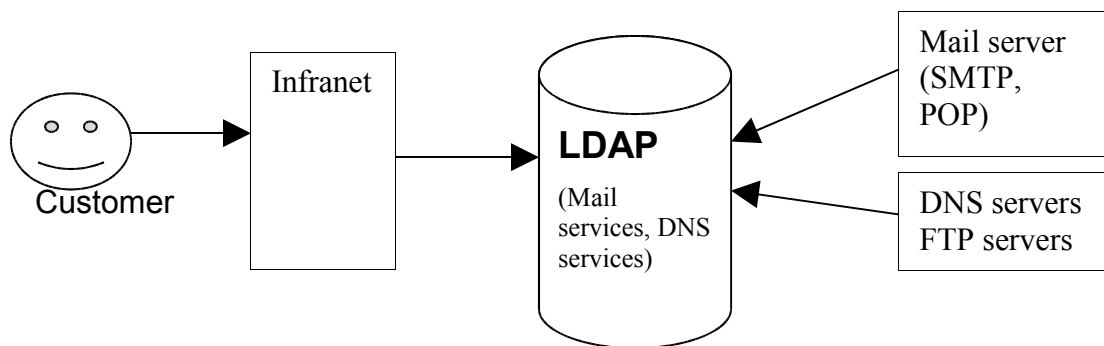| **Third party Brands & Resellers** | **GMOs own brands** | **GMOs own services** | **Third party service** |

Implementation Details

Following are a few salient features of the implementation:

DAP Implementation

The client chose to use open ldap for integration of email, web and ftp service. The LDAP schema was designed to be used by Solaris for authentication via PAM. All the data needed to make PAM work was generated through LDAP. This meant that data for any service that can use solaris for provisioning can be moved to LDAP.
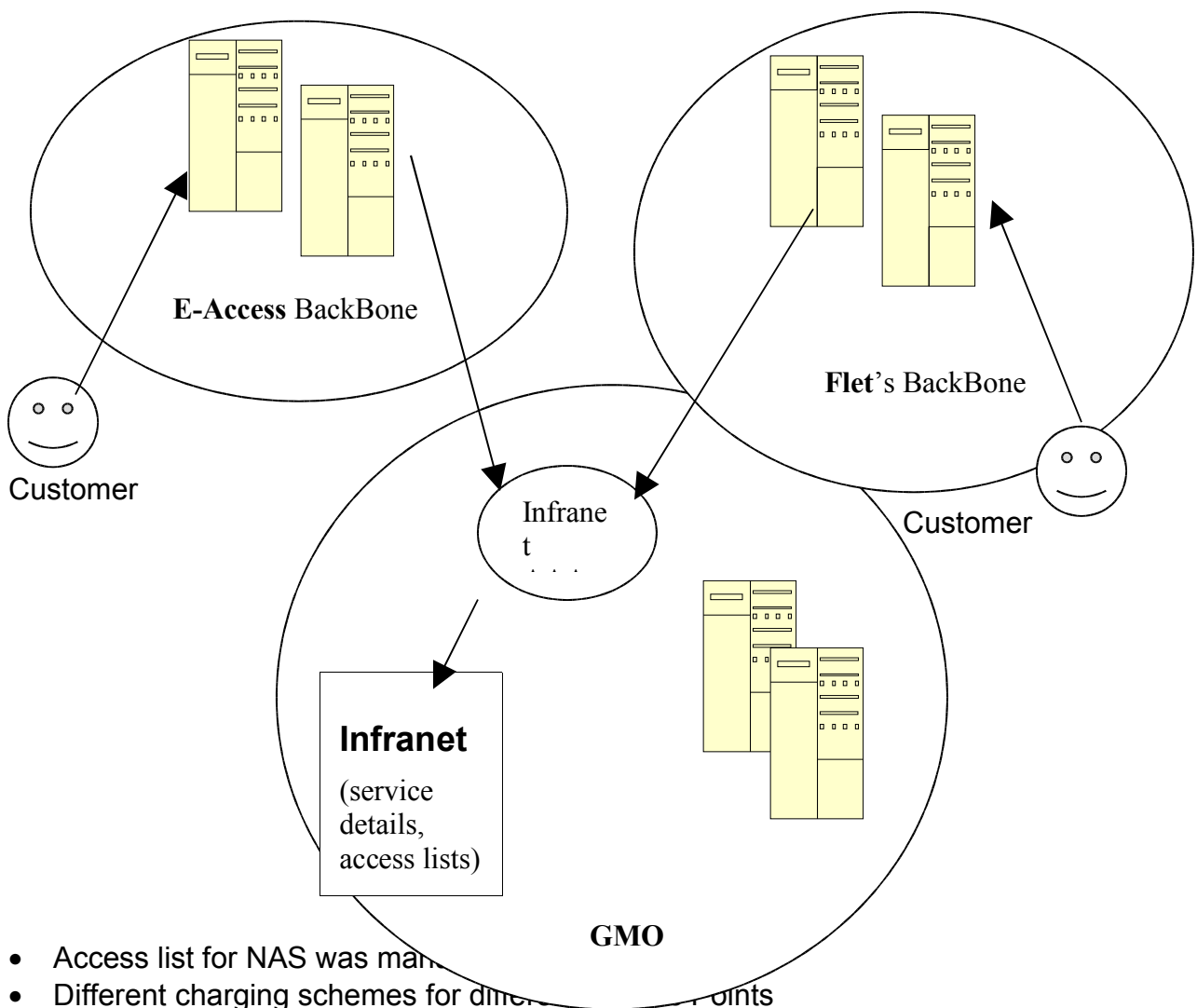
For email, all entries services like mail size usage, auto-reply, mail forwarding were managed in LDAP via Infanet.

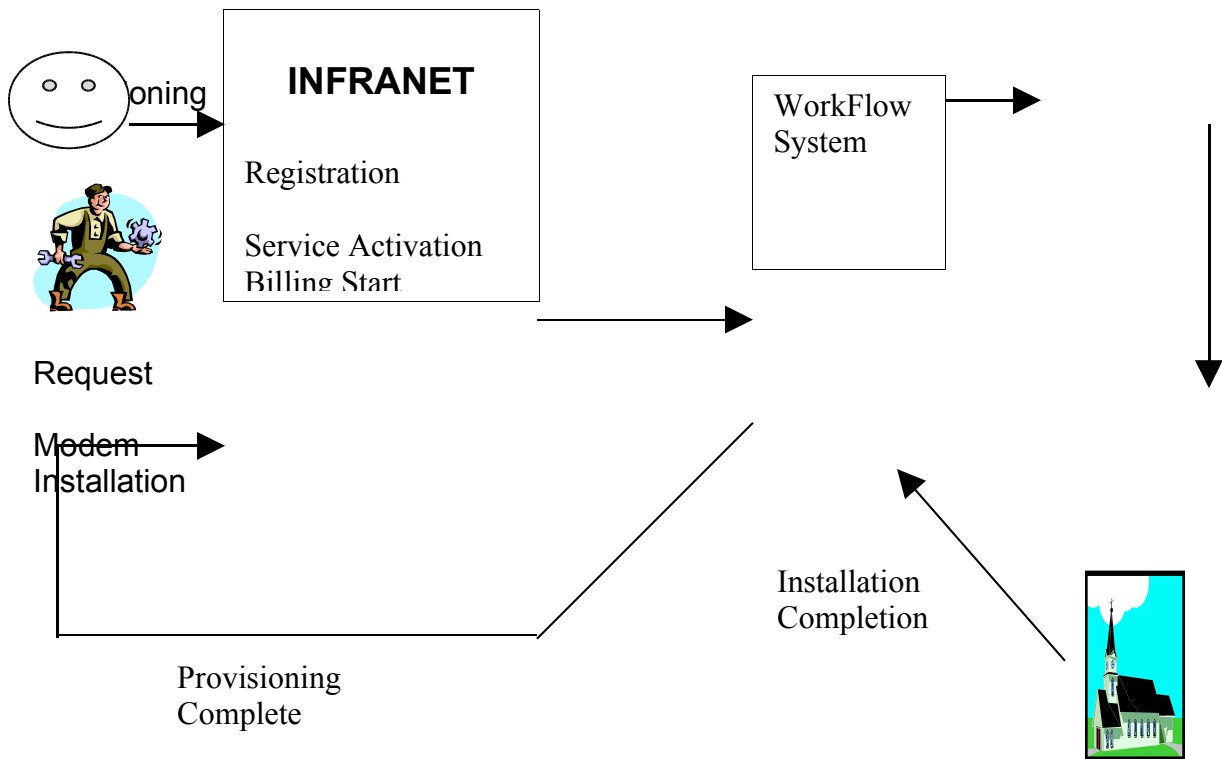For webhosting, access to FTP and DNS services were managed via LDAP.

AAA Implementation

The client was interfacing with various IP backbones and selling different plans to users for each backbone. A system was devised so that the users from one backbone could not get access to service from the other backbone.

- Access list for NAS was ma...
- Different charging schemes for differe... ...oints

Provisioning Engine Implementation

A workflow system was built using the Infranet EAI manager functionality to provision services. So, variable delay was implemented to start charging for products depending on the time it took them to get provisioned. These functionalities were implemented using automated processes.

Custom DM for cybercash (Credit Card) interface

A custom DM was implemented to interface with Cybercash services to validate and charge credit card accounts.

Web based Registration and Account Maintenance

Infranet WebKit and Custom center were customized to provide registration, self-care and CSR functionalities. The resellers could also manage their own accounts through Customer center interface.

Internationalization

Infranet and perl localization modules were used to send data in proper encoding for all interfaces including web interface. Infranet stores data in UTF-8 encoding while all interfaces needed data in Shift_JIS format.